—THE—

Therapeutic Gazette.

Whole Series, Vol. X. | Detroit, July 15, 1886. | Third Series, Vol. II. No. 7.

CONTENTS.

Original Communications.

PAGE

The Pathology and Treatment of Dropsy. By James Barr, M.D. ... 433
Jamaica Dogwood as a Hypnotic. By F. Spencer Halsey, M.D. ... 442
Saccharin. By L. Wolff, M.D. ... 443
On the Discovery of the Mydriatic Action of the Solanaceæ. By Dr. Rud. Kobert ... 445
A Few Experiments with Liquor Potassii Arsenitis. By M. F. Weymann, M.D. ... 448
The Use of Manaca in Rheumatism. By F. Spencer Halsey, M.D. ... 450
The Therapeutic Value of Ichthyol (conclusion). By Dr. Joseph Schmidt 452
Some Remarks on the Treatment of the Summer Gastro-Intestinal Diseases of Childhood. By J. H. Musser, M.D. ... 453
Notes from General Practice. I. Cocaine-Spray in Epistaxis, and in Nasal Surgery generally. By Francis L. Haynes, M.D. ... 456

Leading Articles.

Nitromuriatic Acid and Melancholia ... 457
The Local Anæsthetic Action of Brucine and Theine ... 459
The Preventive Inoculation of Yellow Fever ... 460
Sulphate of Sparteine ... 461
Hopeine ... 462
An Improved Electric Battery ... 462

Reports on Therapeutic Progress.

Himrod's Asthma Cure ... 456
Aneurism of the Thoracic Aorta treated by Galvano-Puncture ... 462

PAGE

Aseptol ... 463
A Novel Procedure for the Removal of Subglottic Laryngeal Growths ... 464
The Treatment of Stricture of the Urethra by Electrolysis ... 464
Salol ... 466
The Value of Lanolin ... 467
The Treatment of Erysipelas with Creasote ... 468
Paraldehyde as an Antidote to Strychnine ... 468
A New Method of Measuring the Temperature in Children ... 468
Climacteric Diabetes ... 469
Nerve-Stretching for Leprosy ... 469
Successful Extirpation of the Spleen ... 470
On the Treatment of Nævus by Excision: Clinical Analysis of 564 Cases of Nævus ... 470
Calomel as a Diuretic ... 471
Manaca in Rheumatism ... 471
The Frequency of Disease of the Uterine Appendages ... 471
The Treatment of Constipation by Massage ... 472
Sugar and Corrosive Sublimate as a First Dressing in War ... 472
Diagnosis of Gonorrhœa in the Female ... 473
The Use of Lemons in the Treatment of Intermittent Fever ... 473
The Treatment of Puerperal Convulsions with Pilocarpine ... 473
Urethan as a Hypnotic for the Insane ... 473
Some Points in the Treatment of Morbus Coxæ ... 474
Two Tracheotomies on the Same Day in one Family—Water poured into Tracheal Wound to assist Expectoration ... 476
The Treatment of Neuralgia by Parthenine ... 477
A New Method for the Removal of Intramural Uterine Tumors ... 477
Urethan in the Treatment of Traumatic Tetanus ... 477
The Action of Fatty Bodies on Carbolic Acid ... 478
Chronic Catarrhal Gastritis ... 478
The Diuretic Action of Cloudberries and Watermelon ... 480
A New and Original Method of Surgical Dressing ... 481

PAGE

Reviews ... 482

Correspondence.

Cocaine in Operative Surgery ... 488
Cocaine in Dysentery ... 489
Fluid Extract of Berberis Aquifolium and Sulphate of Berberine as a Substitute for Quinine ... 489
Extract of Eucalyptus and Glycerin as a Dressing for Erysipelas ... 489
Hydrastine—a Correction ... 490
A Portable Turkish Bath ... 490
Eucalyptus as a Topical Agent ... 491
Hyoscyamus in Singultus ... 491

Notes and Queries.

The Treatment of Ivy-Poisoning ... 491
Butter as a Medicinal Agent ... 493
Some Uses of the Tin Oleate ... 494
Tartar ... 494
Terebene ... 494
Auscultation of the Eyeball ... 496
Rheumatism, Gout, and Diabetes ... 496
The Detection of Albumen in Urine ... 498
Tests for Lanolin ... 499
Detection of Alum in Bread ... 499
The Hair-Roots as Indicators of Bodily or Mental Disease ... 499
A Substitute for Coca-Leaves ... 500
Poisoning by Chloroform ... 500
Equivalent Weights ... 501
Physiological Effects of Massage ... 501
Digestive Ferments ... 502
Magnesium Sulphate in Rheumatism ... 502
A Simple Remedy for Chronic Diarrhœa ... 502
Dialyzing Diaphragms ... 502
Sal Alembroth — Sir Joseph Lister's Latest Antiseptic ... 503
Hydrastin ... 503
Menthol in Urticaria and Pruritus ... 504
Treatment of Acute Rheumatism ... 504
Action of Potassium Chlorate on Chloral Hydrate ... 504
Wrightine and Conessine ... 504

Original Communications.

THE PATHOLOGY AND TREATMENT OF DROPSY.

By James Barr, M.D.*

Read at the Liverpool Medical Institution, April 15, 1886.

DROPSY in its widest sense may be defined as an abnormal accumulation of serous fluid in the cellular tissue or in a serous cavity.

It may be either general or local, and, according to the position which it occupies, has received various designations, such as anasarca, œdema, hydrocephalus, pleural effusion and hydrothorax, hydropericardium and pericardial effusion, ascites, hydrocele, hydrops articuli, acute local œdema, hydrops oculi, ovarian dropsy, hydrosalpynx, etc.

In the ordinary process of nutrition there is a more or less constant transudation of serum from the capillaries, which bathes the tissues in this nutritive pabulum, of which they make use according to their selective affinities, and then it is reabsorbed along with the waste products by the veins and lymphatics.

It is usually asserted that when the balance between transudation and absorption is disturbed dropsy results, so that this condition may be due to excessive transudation or defective absorption. However true these state-

* Physician to the Stanley Hospital, Liverpool; Medical Officer to H.M. Prison, Kirkdale.

ments, the consideration of the conditions under which they arise is much more complex than their broad assertion would seem to indicate. About two-thirds of the weight of the whole body is composed of water, and in the soft tissues of course the percentage is much higher. In health the proportion in different individuals varies, and in disease there may be considerable effusion into the soft tissues before there is any pitting on pressure which would make the condition merit the name of dropsy. In many cases, where I have seen the dry parchment-like skin and contracted features of old age give place to a smooth skin and full rounded features, I have been prepared for the advent of dropsy when the friends and patient were looking upon the appearance as evidence of gaining flesh and returning health. In health the blood-vessels are never fully distended, and the quantity of fluid which they contain is constantly varying. The veins themselves are capable of holding all or more than all the blood in the body. A considerable over-repletion of the blood-vessels may occur without any abnormal transudation, so long as they retain their vaso-motor tone and the velocity of the blood is not materially diminished. In health the quantity of urine secreted often varies very considerably from day to day independently of the quantity of fluid taken in or the amount lost by other sources, and this is due to the varying capacities of the blood-vessels. You all know the diuretic effects, independently of drinking, of hard mental work, and the profuse diuresis which follows an hysterical attack owing to the increased vaso-motor tone.

Not only does this tone and elasticity of the blood-vessels regulate the amount of fluid which they contain, but the elasticity of the tissues is also concerned in regulating or limiting the amount of fluid which transudes into their intercellular spaces. The loss of this elasticity in disease is a potent factor in the production of dropsy, and also an obstacle to our efforts to remove the disease.

Dropsies may be divided into two classes: (1) Those cases in which there is an abnormal transudation from the capillaries without apparent obstruction in the absorbents, such as occurs in inflammations, in vaso-motor paralysis, in anæmia, in Bright's disease, etc. (2) Those cases in which there is obstruction to the return current, whether local or general, such as the occlusion of a vein or lymphatic, portal obstruction from cirrhosis of the liver, or general venous obstruction from mitral or tricuspid regurgitation or obstructive lung-diseases. The conditions which give rise to these broad distinctions are variously compounded in different cases, and the distinctions are here made more for facilitating clearness of description than for indicating any sharp lines drawn in nature.

When we come to consider the causes of abnormal transudation there are three conditions which must engage our attention,—(*a*) the condition of the walls of the vessels,—increased permeability; (*b*) the condition of the blood and its greater liability to transude; and (*c*) the pressure within the capillaries. This last condition we will consider first, as perhaps the most important, and a clear comprehension of it will help us to a better estimate of the value of the others. As the transudation takes place from the capillaries it is the condition of the blood within them with which we are here concerned, but in order to understand this we must take a brief glance at the general physics of the circulation. In a paper which I published in the *Liverpool Medico-Chirurgical Journal*, July, 1883, on the "Pathology and Treatment of Tubal Nephritis," I drew attention to the statical and dynamical conditions of the blood in the production of albuminuria, and extended those views to the production of dropsy. I wish now to follow out this paper much in the same lines there laid down.

There have been numerous calculations of the force of the human heart, but all the estimates can only be looked upon as more or less close approximations to the truth. You cannot attach a manometer to any of the large arteries in the same way you can experiment on the lower animals. Perhaps about the most accurate calculations have been made by Professor Haughton, of Dublin.* In the course of an operation a large artery spurted very freely over the operating theatre in different directions. Dr. Haughton measured the co-ordinates of the maximum range, and thus calculated the velocity with which the blood left the artery. From this and the co-efficient of capillary resistance he calculated the force of contraction of the left ventricle. He estimated the force to be equal to four and a half pounds to the square inch, or a force equal to support a column of blood 9.923 feet high. It is quite beyond the province of this paper to enter into the physiological question of the correct force of the heart, as our object is only to deal with comparative forces arising under different conditions,

* Principles of Animal Mechanics, 1873.

though it may be taken, I think, as a matter of fact, that the force of a healthy adult heart with normal arterial tension is capable of supporting a column of blood of eight to ten feet high. There can be no doubt that this force varies very materially in different individuals. In the same individual in a state of health the range of variation is perhaps slight, but in disease it may be very considerable. The *vis viva*, or energy imparted by the heart, may be represented by the formula $\frac{MV^2}{2} = \frac{1}{2}\frac{W}{G}2Gh = Wh = GMh$.

Here h represents the height of the column of blood maintained by the force of the cardiac contraction, and it might be supposed that this column would be maintained at the same level, as in the case of a steam-pump set to do a certain amount of work,—irrespective of the resistance. But such is not the case with the heart. I have shown in several of my writings that the force of the contraction greatly depends on the amount of resistance, and when this is greatly lessened the force of the contraction is correspondingly diminished. In cases of copious loss of blood the column h falls rapidly, and the diminution in force may sink below that necessary to carry on the circulation, and so you may have fatal syncope. This no doubt is due to the low tension in the aorta being insufficient to drive the blood through the coronary arteries, and thus the heart is not supplied with a sufficient amount of fuel to enable it to maintain the force of its contraction. This would correspond to the fire going out in the case of the steam-pump. This is a most important point to bear in mind in the treatment of dropsy by purgation, or by rapid removal of fluid by mechanical means ; as you may thus, in many cases, so rapidly deplete the arterial system as to arrest the action of a feeble heart. I will have to refer to this part again when I come to speak of treatment.

Thus, low arterial tension lessens the force of the cardiac beat, while high tension raises it so long as the heart is capable of meeting the resistance. This, however, may be so great as to overpower the heart, and tell backwards through the lungs on the general venous system, thus tending to equalize the pressure, and so the arterial column h in this case also falls.

The velocity in the arterial tree depends on the force of the cardiac beat, or, in other words, on the height of the column h (velocity, $V = \sqrt{2Gh}$). If the arteries were rigid tubes, with a given force, the velocity would be simply inversely as the sectional areas of the arteries at different distances from the heart, and the current would intermit with the beats of the heart. In cases of high tension, a considerable amount of the energy is stored up in the elastic walls of the arteries, and this tends to make the velocity more or less uniform. In cases of very low tension the arteries are not much distended, so that they in great part act as rigid tubes, and thus the velocity becomes more or less intermittent.

We have previously seen that in low tension the column h (on the square root of which the velocity depends) falls so that the mean velocity is diminished. Now, this great or total velocity, in cases of high tension, is maintained in the arterioles and capillaries so long as there is no obstruction to the outflow from them into the veins. It is still further augmented in these minute vessels over that existing in cases of tension, for the following reasons : The high arterial tension is mainly induced by the obstruction to the arterial flow through the contraction of the lumen of these vessels, and as the velocity is inversely as the sectional areas, so, with equal forces, the velocity in contracted capillaries is greater than in those which are dilated. If the blood were a perfectly mobile liquid, and free to move without any resistance, the force of the cardiac contraction would be converted into velocity, and there would be very little lateral pressure on the walls of the vessels. But the blood is a very viscous fluid, and there is also considerable resistance to its flow from the capillaries and arterioles, and from the friction against the walls of the vessels ; thus the velocity is diminished and the statical condition partly maintained. Part of the work of the heart is thus converted into stored energy in the elastic walls of the arteries. This distention of the elastic walls gives rise to what engineers call a head in the liquid, and this, in turn, imparts further movement to the blood during the interval between the beats, equalizes, and makes the discharge continuous. It is well known that in propelling fluid through rigid tubes a considerable amount of the force is used up in friction of the molecules against each other and against the sides of the tubes, so that in about two hundred feet the discharge is reduced to one-fourth.

In elastic tubes this waste of force is very much reduced, and so the discharge is much greater, and when the tube is very elastic there is not much waste from friction. All these physical conditions come frequently into play in the human circulation. When the aorta and large arteries are healthy, and

there is moderate tension, the force of the heart is used in propelling the blood onwards and storing its work in the elastic coats of the vessels, which is again expended in the onward movement of the blood between the beats. When the aorta is very atheromatous it plays the part of a rigid tube, and when the tension is very low the elasticity of the vessel is not made use of, so that the heart is in part wasting its energy in pumping blood into empty tubes. In the former case the heart meets the increased resistance so long as it is capable of hypertrophy, but in the latter case, there being diminished resistance, and no demand for increased force, there is no hypertrophy, and the heart wastes its energy in futile efforts to carry on the circulation, as happens in many febrile affections.

In very low tension, if the heart be at all vigorous, the velocity is increased during the period of systole, and the intermittent pulsations may be carried right through the capillaries into the veins. In proportion as the velocity is increased the lateral pressure is diminished, and so there is lessened interchange between the blood and the tissues. This readily accounts for the rarity of general anasarca in most febrile affections, for, although in many instances the force of the heart is greatly lessened, the resistance is correspondingly diminished, and there is no great lateral pressure in the capillaries; the *vis viva* is converted into velocity, and the statical condition of the blood is lessened.

On the other hand, in many cases of low tension, such as cases of mitral regurgitation, part of the force of the heart is expended in the wrong direction, the veins and capillaries are overfilled with fluid, there is, consequently, an obstruction to the onward movement of the blood, the velocity is diminished, and the statical condition increased, and so we get dropsy.

It seems to me that there is often a great confusion between high arterial tension and the amount of lateral pressure on the walls of the capillaries. It is generally supposed that both stand in a direct ratio to one another, but I hope to show that this is a *non sequitur*. This is a most important point to understand, because in dropsy the effusion takes place from the capillaries, and therefore it is with the condition of the current in them we are immediately concerned in the production of dropsy. High arterial tension may be produced in one or both of two ways: (*a*) by increased inflow from the heart, or (*b*) increased resistance to its exit through the arterioles and capillaries.

No matter how high the arterial pressure, it does not imply increased lateral pressure on the walls of the capillaries so long as there is no obstruction to the flow from them into the veins. The force of the heart is a very varying quantity, and, as I have shown in my papers on reduplication of the heart's sounds,* is directly proportionate to the amount of resistance, so long as this does not exceed the capabilities of the heart. This increased obstruction to the outflow from the arteries calls forth greater force from the heart, the aorta is stretched, the head of the liquid is raised, and so long as the heart maintains this force, and there is no obstruction to the flow from the capillaries to the veins, the velocity in the former is increased. Once, however, the heart is overworked and begins to fail, the blood increases in the venous radicles, and there is increased obstruction to its exit from the capillaries, the velocity is diminished, and the statical condition increased. This is the condition which occurs in the general anasarca of acute Bright's disease, and here the statical condition is further augmented by the retention of fluid within the system, which overfills and distends all the blood-vessels. This may also be expressed by the law that the velocity is inversely as the sectional area. The effect of increased sectional area in diminishing the velocity and augmenting the statical condition is well shown in local œdemas due to vaso-motor paralysis. Here the blood-vessels are dilated, and contain an excessive amount of fluid, which moves slowly, exercises considerable lateral pressure, and so readily transudes into the yielding tissues. It is from the capillaries that transudation takes place, and these conditions clearly explain the absence of dropsy in the early stages of granular kidney, where you have great cardiac force and rapid velocity. We have previously seen that the *vis viva* equals $\frac{MV^2}{2}$, and $V^2 = 2Gh$, so that, when the mass remains constant, any increase in the *vis viva* is converted into velocity, and the statical condition or pressure is relatively diminished. Further, the statical condition depends on sectional areas, because the larger the area the greater the mass and the less the velocity. Hence, under any circumstances the total lateral pressure within the capillaries is greater than that in the arteries or veins, and of course the greater the section of the capillary area the

* *Medical Times and Gazette*, 1877; *Liverpool Medico-Chirurgical Journal*, July, 1882.

greater the lateral pressure within them, but the less the resistance offered to the heart. Professor Haughton has shown that capillary resistance is directly proportional to the length of the tubes, and inversely proportional to the squares of their cross-sections. Resistance tells backwards in the course of the circulation. Obstruction to the flow of blood into the arterioles and capillaries raises the arterial tension, and venous engorgement raises the pressure within the capillaries. High arterial tension may lead to engorgement of the lungs, and pulmonic obstruction to overloading of the systemic capillaries and veins. The blood tends to move in the direction of least resistance, and hence the amount of transudation through the walls of the capillaries will be directly as the statical condition or pressure within them and inversely as the velocity. This leads us up to the question of the relation of the amount of fluid within the vessels to dropsy. Owing to the action of the vaso-motor nerves the arteries are capable of undergoing considerable alteration in capacity. When they are dilated a larger quantity of blood is supplied to the capillaries, the elastic walls of which dilate and allow of a corresponding increase. When there is no defective elimination of fluid from the body, and no obstruction to the flow from the capillaries, there may be no extra filtration through their walls. This increase of fluid in the body may be limited to over-repletion of the vascular system, which may just act as a temporary reservoir. When, again, the vaso-motor nerves contract the arteries and arterioles, the arterial tension is raised, the blood is driven with increased velocity through the capillaries, and consequently the lateral pressure within them is diminished, and so the elastic walls contract and reduce their dimensions. Thus the temporary reservoir is abolished, and its contents may be discharged by an abundant secretion of urine. If there be any defective elimination, the fluid soon accumulates, and from its mere bulk becomes an obstacle to the propulsive power of the heart, the velocity is diminished, and the statical condition increased, and the filtration through the capillary walls is augmented. There is also increased pressure and over-repletion in the venous radicles, and consequently diminished absorption.

Fluids pass very readily through organic membranes, such as compose the walls of the capillaries, by a process of osmosis, but albumen does not thus readily transude. Unlike the capillaries of the lungs and kidneys, the systemic capillaries allow albumen to pass easily through their walls, so that it is found in all the intercellular fluids. Now, if it does not pass through by osmosis, we must suppose it to be filtered through under varying amounts of pressure. In filtering under pressure, as a rule, the greater the pressure the greater the amount of the filtrate, but the composition of the latter differs very materially from the nature of the compound fluid submitted to pressure, as the different constituents pass through with varying degrees of ease, the water passing much more readily through than the albumen. Hence, although the total amount of albumen passed through may be increased according to the quantity of the filtrate, its percentage is diminished. Hence the greater and more rapid the production of dropsy—if there be no increase in absorption—the less the relative amount of albumen.

The Condition of the Walls of the Capillaries.—We have seen the varying effects of pressure within the capillaries, and we now come to consider the condition of their walls. The capillaries of the lungs and kidneys are well protected by an epithelial covering, and do not readily allow the passage through them of albumen, but in certain diseased conditions their secretions may be highly albuminous. The systemic capillaries allow of a filtrate of albuminous and watery constituents of the blood, and no doubt this takes place more readily when the elasticity of the vessels is lessened. We have seen how vaso-motor paralysis increases the sectional area of the capillaries, diminishes the velocity, and increases the statical condition of the blood. This augments the difference between its pressure within and outside the capillaries, increased transudation takes place through the more permeable walls, and this goes on until an equilibrium of pressure within and without the capillaries is established. The diminished resiliency of the tissues does not tend to drive the fluid into the veins, in which there is, in this case, more than ordinary pressure.

Under this head may be included the numerous cases which occur in the practice of surgeons from, shall I say, their too judicious treatment of fractures. In many cases of paraplegia you may have no dropsy, while in others there may be extensive brawny œdema and the formation of bed-sores, owing to the involvement of the vaso-motor nerves.

In inflammation there is vascular dilatation and increased permeability of the walls, which give rise to œdema or effusion of fluid into a serous cavity.

The Condition of the Blood itself.—The more watery the fluid the more readily does it pass through the walls of the vessels both by the processes of osmosis and filtration. Some have supposed the more watery the fluid the greater the resistance to its flow along the vessels, but such is not the case. In fact, by diminishing the viscosity, the very reverse should happen. When the blood is very hydræmic, however, the heart is not so well nourished, its force is not so well maintained, and at the same time it is handicapped by the increased quantity of fluid to move along. Hence the blood, although from its quality it may offer less resistance, has less energy, moves with a less velocity, its statical condition is increased, and it filters more readily through the walls of the capillaries. These are the conditions existing in the dropsy of anæmia. Although you have generally got high arterial tension, the vessels are dilated and the force of the heart is very materially lessened, so in the *vis viva* the mass is increased but the velocity is decreased. The blood flows slowly through the capillaries; its lateral pressure within them is increased, and transudation of the watery fluid readily takes place, especially in the feet and ankles, where there is superadded to this general condition the obstruction to the flow from the capillaries into the veins, owing to the action of gravity and the weight of the venous column of fluid.

Dr. Lauder Brunton, in the article on "Dropsy" in Quain's "Dictionary of Medicine," states: "In albuminuria the altered composition of the blood appears to be the chief factor in the production of œdema, as the pulse in such cases may be hard, evidencing arterial contraction and not relaxation." This, in my opinion, is an over-statement of the influence of the condition of the blood. The high tension may overpower the left ventricle, there may be a damming back of the blood in the lungs, and systemic veins obstructing the flow from the capillaries. However, there is diminished excretion of fluid, the blood-vascular system is overfilled, and so within the capillaries there is increased pressure and diminished velocity. There are more ways of accounting for it than merely the watery condition of the blood. However, we will have more to say of this again.

We now come to consider the second main class of dropsies, viz., those due to defective absorption, whether local or general, such as arise from the occlusion of a vein or lymphatic, or general venous obstruction from mitral or tricuspid regurgitation or obstructive lung-diseases. This forms a large and important class; usually in these cases there is not merely defective absorption, but the obstruction may also give rise to overpressure within the capillaries with increased transudation.

The veins are the chief absorbents, and venous obstruction is a more common source of dropsy than occlusion of the lymphatics.

Although a vein be obstructed, it is possible, if the transudation be very slight, that the lymphatics may absorb the fluid, and so there be no dropsy. On this point, Dr. Lauder Brunton, in his article on "Dropsy" in Quain's "Dictionary of Medicine," quotes the experiments of Ranvier, who found "that ligature of the vena cava in a dog does not usually produce œdema of the lower extremities, but if one sciatic nerve be divided in such an animal, the corresponding leg at once becomes œdematous. The reason of this is, that so long as the nerve is intact the lymphatics can absorb all the fluid which exudes from the capillaries, but when the nerve is divided the arteries dilate, more fluid is passed out than the lymphatics can absorb, it accumulates in the tissues, and œdema ensues. This œdema is not due to paralysis of the limb, but to paralysis of the vessel; for, if the sympathetic fibres through which the vaso-motor nerves pass to the sciatic nerve are divided before they join the motor fibres of that nerve in the sacral plexus, the power of movement remains unimpaired, but œdema occurs just as if the whole nerve had been divided. If, on the other hand, the motor strands of the sacral plexus are cut before they are joined by the sympathetic fibres, the limb is as completely paralyzed as if the sciatic nerve had been cut, but no œdema takes place."

In the case of the dog, there is not much loose cellular tissue in the hind legs, the vessels are well supported by the good tonicity of the tissues, the blood-supply is not great, and, so long as the vaso-motor tone is maintained, even with the vein occluded, the pressure within the capillaries cannot rise very high, perhaps very little higher than that on their external walls. Tying the vein brings the blood in the extremity to a standstill, the vaso-motor nerves contract the arteries, and very little blood enters the limb; the force of the heart or weight of the blood-column acts on a comparatively small mass of blood, and therefore the hydraulic pressure is not greatly raised.

Once, however, the vaso-motor nerves are cut, the vessels are paralyzed and dilated, and the quantity of blood greatly augmented, with a corresponding increase in the hydraulic pressure. When the return of blood from a limb is wholly prevented, the onward movement of the blood is stopped, and the pressure within the tubes becomes a question of hydraulics.

Fluid pressure depends on the depth of the liquid, and, as the statical pressure is equal in all directions, its total sum will depend on the area. When a vein is occluded in a dependent limb, you have the weight of the arterial and venous columns of blood tending to dilate the capillaries, and, as the pressure at any given depth is equal in all directions, the total pressure within the capillaries will be proportionately greater than that within the arteries and veins as their sectional area is greater.

To the statical condition of the blood within the limb you have superadded the force of the heart or the pressure of the arterial blood-column. This may be expressed in so many pounds to the square inch, and so the greater the amount of fluid on which it acts the greater the total pressure. We must see why, in these cases, when the vaso-motor nerves are divided, the pressure is so much greater. These arguments, of course, apply not merely to a limb, but also to any area from which the blood is wholly prevented from returning by the occlusion of the veins.

When the return current is not wholly prevented, such as in portal obstruction from cirrhosis of the liver, the effects are correspondingly less. This also applies to the amount of obstruction to the general circulation from tricuspid regurgitation. I know a case at present where I believe there is total occlusion of the lower part of the vena cava, but the collateral circulation is so well established through enormously dilated superficial veins of the abdomen that there is no dropsy.

Cases of dropsy, arising from obstruction of the lymphatics, are not very common. In cases of lymphangitis, there is considerable brawny swelling, though this is no doubt due to involvement of the capillary blood-vessels. I have seen considerable œdema of a lower extremity arise from inflammation of the lymphatics around the femoral artery. Dr. Whitla lately recorded a very interesting case of chylous ascites arising from perforation of the thoracic duct.*

Various forces combine to carry on the circulation in the lymphatic vessels; the current is very slow, and even in the thoracic duct it is reckoned not to exceed one inch per second. Among the chief of these forces must be mentioned osmosis. The great attraction which albumen has for water must cause an endosmotic current into these vessels, but in cases of œdema, where the effused fluid is highly albuminous, the force of this current must be diminished. The pressure of the muscles and the elasticity of the tissues also largely contribute to the onward movement, and the innumerable valves with which the lymphatics are supplied secures the full benefit arising from these forces. When the elasticity of the tissues is lost, and the activity of the muscles diminished, as in dropsy, there will be a corresponding diminution in the velocity of the lymph current. The thoracic duct discharges its contents into the junction of the left internal jugular and subclavian veins, where the pressure is usually negative, and so each inspiration must contribute to the onward movement of the lymph. Dr. Lauder Brunton thinks that in the pleura and peritoneum, which are now generally looked upon as large lymph-sacs, the respiratory movements play an important part in the absorption of and carrying on the circulation of the lymph. From a full consideration of all these conditions we cannot attribute more to the lymphatics and the condition of the tissues than a passive action in the production of dropsy.

Having now fully dealt with the general question of dropsy, we will consider the etiological factors in the causation of its different varieties. General anasarca, of which we will first treat, is usually supposed to be due to hydræmia, though opinions differ as to how the watery condition of the blood is brought about. Some observers, who are endowed with a very small horizon, can trace all the evil effects of Bright's disease to the loss of the albumen, and imagine that the low specific gravity of the blood-serum is due to the loss of this solid constituent. They fail to see that the blood can be more readily diluted by the addition of water than by the abstraction of its solids.

Bartels, Grainger Stewart, Carter, and a host of others recognize the fact that dropsy frequently occurs when there has been little or no loss of albumen, and they correctly ascribe the hydræmia to retention of water in the system. Dr. Carter† deals fully with the

* *British Medical Journal*, May 30, 1885.

† Renal and Urinary Diseases, 1878.

effects of velocity and pressure in the circulation, and shows how the water is not eliminated by the kidneys, but he leaves the question there, and does not show how the transudation takes place into the cellular tissue. The defective elimination of fluid necessarily increases the amount retained in the system, and we have now to consider the mechanism by which it is transuded into the tissues. If you have got several water-taps in connection with the same main pipe in your house, and you turn them all on, the first one or two taps may be able to empty the pipe, and there may be no efflux from the more distant ones. Now, if you shut the proximal taps, the flow takes place from the more distal ones. The flow, in this case, is not immediately due to the closure of the other taps but to the pressure of the liquid. So with the closure of the kidney taps.

In my paper on the "Pathology and Treatment of Tubal Nephritis" I stated,* "In acute Bright's disease the heart's action is vigorous, and at first it is quite able to meet all the demands which are made upon it; the surplus of expulsive power is great, overtops the high arterial tension; the blood is driven with considerable velocity through the contracted and even the most remote arterioles. The function of the kidneys, however, is suppressed; the excess of water is not got rid of by the skin and lungs, hence it accumulates in the blood-vessels, and gives rise to increased statical pressure within them. The pressure soon more than counterbalances the velocity of the blood, and so abnormal transudation takes places into the cellular interstices of the tissues, and probably also, in many cases, into the serous cavities. The pressure, however, is universal, and not simply a pressure occurring in greater degree at the most extreme points of the circulation, as in adynamia, hence the effusion first takes place from the capillaries which are least supported; thus the dropsy usually first appears in the loose cellular tissue of the lower eyelids, from whence it quickly spreads over the whole body. In some cases you may see œdema of the lower extremities during the day, which partly subsides at night, giving place to swelling of the lower eyelids in the morning. If the heart's action fail, you get pulmonary congestion and œdema, which still further obstruct the venous return and increase its results."

Anasarca due to kidney-disease is usually associated with acute Bright's disease, the large white or fatty kidney, to a less extent in amyloid disease, and it may occur in the last stage of granular kidney when the heart begins to fail. Dropsy occurs most readily in those cases where there is a large retention of fluid, which increases the statical condition of the blood, gives more work to the heart, diminishes the velocity, and causes the blood-serum to transude more readily into the tissues. In the early stage of granular kidney the blood-vessels are contracted, with a corresponding diminution in the mass of blood in circulation, the arterial tension is high, the heart's action vigorous, which imparts great velocity to the blood and carries it not only quickly through the systemic capillaries but also through the kidney, where the surplus fluid is eliminated. Dropsy due to disease of the kidneys commences in the cellular tissue, then extends to the serous cavities, where the vessels are better supported and transudation less likely to occur, and lastly produces œdema of the lungs.

Senator, in his classical work on "Albuminuria in Health and Disease," makes, to my mind, the following extraordinary statement:† "In addition to the fact that dropsy is as constant in the one type (large white kidney) as it is rare in the other (granular kidney), the way in which this symptom makes its appearance is so peculiar that the idea suggests itself that some disease of the skin is concerned in its production.

"It is perfectly evident that the dropsical effusion cannot be referred to suppression or diminution of the urinary secretion, an explanation advanced by some observers. Even the complete interruption of the discharge of urine, which may originate from obstruction in the urinary passages, does not, *per se*, produce dropsy as a consequence. Cohnheim very particularly refers to the fact that neither hydræmia nor hydræmic plethora can be the cause of dropsy in those diseases of the kidney.

"Its proportionately rapid supervention, the great extent of the anasarca, and above all its localization, would rather seem to indicate the existence of special local abnormalities, which Cohnheim is inclined to look for in some inflammatory change of the skin or its vessels. It is in fact difficult, without some such assumption, to explain how it comes to pass that, in the first form of chronic nephritis (and also in acute nephritis), the eyelids or the scrotum are the usual seats of the œdema, and often those which are first affected; for, as

* *Liverpool Medico-Chirurgical Journal*, July, 1883.

† New Sydenham Society's Translation, 1884.

regards these parts, the influence of gravity cannot be a sufficient cause for the appearance of the symptom."

The refutation of these statements ought to be sufficiently clear from what I have previously stated, but I may also add that complete suppression of urine does not necessarily produce dropsy, because there may be no greater quantity of fluid imbibed than is got rid of by other channels. I have seen general anasarca appear and disappear many times in the same case, where there was no alteration in the state of the skin, and the treatment on each occasion consisted mainly in the diminution of the amount of fluid ingested. There may be sufficient pressure within the capillaries to produce œdema without any influence from gravity. When the pressure outside the capillaries is much less than that inside, transudation is apt to take place. I have shown that there is this greatest difference where the capillaries are least supported in the loose cellular tissue of the eyelids, scrotum, etc.

In anæmia the dropsy usually commences in the feet and ankles, or other dependent parts. The conditions present are dilated vessels, high arterial tension, and feeble heart. The dilated vessels increase the mass of blood, and the statical pressure being as the depth of liquid the total pressure within the capillaries is great. To this must be superadded the force of the heart. The effect of position in these cases is very great, for the following reason: When the limb is dependent you have the force of gravity plus the force of the heart, whereas when the limb is raised you get the force of the heart minus the force of gravity. The velocity within the capillaries depends on the force of the heart or height of the arterial blood-column and the sectional area of the capillaries, and as the former is weak and the latter great the velocity is much reduced, and the pressure much increased. Moreover, the watery condition of the blood and diminished pressure outside the capillaries would allow the serum to transude more readily.

I have before sufficiently explained the mechanism of acute local œdemas due to vasomotor paralysis. In the case of dropsy arising from inflammations, such as peritonitis, pleuritis, pericarditis, synovitis, meningitis, inflammation of the soft tissues, etc., the vessels are dilated and become more pervious, the quantity of blood is augmented, the statical pressure increased, and the velocity diminished. The fluid transudes under high pressure, and there is also a considerable amount of coagulable lymph poured out as the result of the inflammation, which forms a coating over the serous surfaces, thus obstructing absorption by the veins and lymphatics.

Dr. Lauder Brunton* says that "accumulation of fluid in the ventricles of the brain, or in a subarachnoid cavity, is chiefly due to compression of the veins of Galen." I think it will be generally found to arise from excessive transudation independently of any obstruction. In cases of chronic alcoholism and chronic Bright's disease there is usually more or less wasting of the cerebral cortex, which is replaced by an excessive amount of cerebro-spinal fluid. This may be readily increased at any time under high pressure, when there is a state of hydræmic plethora. The watery brain becomes compressed with resulting stupor and coma.

In ovarian cysts, hydrosalpynx, hydrocele, etc., the pressure within the capillaries is greater than that on their external walls, hence transudation takes place into the cyst. Immediately after tapping, the hydrostatic pressure within the cyst is slight and effusion takes place rapidly, but as a cyst gets full the greater pressure supports the capillaries and transudation takes place more slowly. Dr. W. H. Stone† found the cyst tension in cases of ovarian dropsy to support a column of water fourteen inches in height, and in one case, where the circumference of the cyst was forty inches, he estimated that this tension force would equal two hundred and sixty-five pounds. In the case of ovarian cysts mere transudation from the capillaries would scarcely account for the thick and highly albuminous character of the fluid, so it is probable that the cyst plays the part of an endosmometer. Fluid is secreted or poured out from the capillaries, and the more liquid portion is re-absorbed, so that eventually a concentrated albuminous fluid is left. The action of an endosmometer would also more readily explain the high tension, which is at least double that of ascites, and which must be the potent factor in the rapid enlargement or growth of the cyst. In many cases of pleural effusion the tension is negative, and contrasts markedly with the condition which we have just described.

Obstructive Dropsy.—Dropsy arising in cases of mitral regurgitation generally begins at the farthest extremity of the circulation, such as the feet, where the velocity is least and hydro-

* Quain's Dictionary of Medicine, art. "Dropsy."

† *Medical Examiner*, Feb. 15, 1877.

statical pressure greatest. In these cases part of the force of the heart is expended in the wrong direction, and there is a corresponding diminution in the onward movement of the blood. There is a general accumulation of fluid in the veins, and obstruction to its flow from the capillaries. In the lower extremities there is also superadded the influence of gravity acting on the weight of the column of blood. In mitral stenosis and obstructive lung-disease the conditions are similar, except that there is no force transmitted backwards from the left ventricle through the mitral orifice.

In cases of tricuspid regurgitation the dropsy not unfrequently begins as an ascites. Here you have not merely, as in mitral disease, overloading of the venous system, which necessarily begins in the most distal veins, but there is a positive forcible backward impulse against the advancing current, which necessarily first tells on the large mass of blood in the vena cava and such main branches as the hepatic veins. The impulse may cause the whole liver to pulsate, and anyhow it obstructs the portal circulation, and may thus give rise to great effusion.

Cases of ascites resemble those of partial occlusion of a vein, and this part has been previously considered.

Hydrothorax and hydropericardium may be the result of excessive transudation from hydræmic plethora, such as that occurring in Bright's disease. They may also arise from venous obstruction owing to the pressure of an aneurism.

In hydrophthalmia there is great enlargement of the anterior half of the eye, with corresponding increase in the aqueous humor. Dropsy of the optic disk is probably as a rule due to venous obstruction, and the retinal artery being a terminal one the circulation in the affected tract cannot be relieved by collateral circulation. In detachment of the retina (sub-retinal dropsy) the serous effusion is most probably due to occlusion of some of the choroidal veins.

(To be concluded.)

JAMAICA DOGWOOD AS A HYPNOTIC.

By F. Spencer Halsey, M.D., New York.

THE following is a report of cases in which the fluid extract of piscidia erythrina, or Jamaica dogwood, was used during my service at almshouse and workhouse hospitals during the summer of 1885:

Case I.—Bernard S. Large ulcer on foot. Great pain, and very restless at night; opiates give no relief.

April 20.—Dogwood, ʒi, at bedtime; slept very well; no untoward effects.

April 21.—Slept all through.

April 22.—Another good night.

April 23.—Dose lessened; fair results.

April 24.—Repeated first dose; good result.

Case II.—Mary D. Phthisis. Unable to sleep on account of cough.

April 28.—Dogwood, ʒi, at bedtime; slept fairly well.

April 29.—Slept well all night.

April 30.—Did not sleep much.

April 31.—Repeated dose; same effect.

Case III.—Hannah J. Phthisis.

May 4.—Dogwood, ʒi; slept all night.

May 5.—Rested more quietly.

May 6.—Slept well.

Case IV.—John R. Alcoholism. Very restless and wakeful.

May 5.—Dogwood, ʒi; slept all night, and awoke refreshed.

May 6.—Slept very well.

Case V.—John A. Chronic Bright's disease. Has not slept well for five nights.

May 12.—Dogwood, ʒi; slept almost all night.

May 13.—Did not sleep as well.

May 14.—Repeated dose; no better result.

Case VI.—Maria F. Alcoholism. Gave dogwood, ʒi, night of May 20. Patient slept all night.

May 21, 22, 23.—Repeated dose; same effect each night; good night's rest; and awoke with no unpleasant feeling.

Case VII.—Henry M. Phthisis. Unable to sleep on account of cough, which is very troublesome. Has tried potass. brom., tr. hyoscyam., and other hypnotics with no good result. On night of June 5 gave dogwood, ʒi, with the result that patient slept fairly well; less cough.

June 6–10.—Gave dogwood each night, during which patient slept well, and was less troubled on awakening than with any other medicine he had taken.

Case VIII.—William S. Fracture of radius. Unable to sleep on account of pain in arm. Ordered dogwood, ʒi, to be given him on night of June 30. Slept all night.

July 1, 2, and 3.—Gave same dose, on all of which nights the same effect was obtained.

Case IX.—Maggie McD. Compound fracture of the olecranon. Cannot sleep on ac-

count of pain; very restless. Opium or morphine makes her worse; bromide has no effect unless given in very large doses. Tried dogwood, ʒi, during night of August 2, and found it to work very satisfactorily, patient sleeping nicely all night.

August 3.—Same result.

August 4, 5, and 6.—Slept well all night.

August 10.—Again given; good sleep.

August 12.—Same result.

CASE X.—Julia M. Syphilis. Considerable pain in both legs; has not enjoyed a good night's sleep in a long time.

August 10.—Dogwood, ʒi; slept fairly well.

August 11.—ʒi; slept all night.

August 12.—Did not sleep as well.

August 13.—Same; did not sleep until after midnight.

August 14.—ʒi; complained of severe pain in head; no sleep.

August 15.—ʒss; no pain; less restless.

August 17.—ʒi again; slept well.

August 18, 19.—Same result.

August 20.—Repeated dose; same effect.

CASE XI.—Martin W. Large varicose ulcer on leg. Suffers much pain; opiates do not affect him pleasantly.

August 27.—He was given ʒi of dogwood; result, he slept very well.

August 28.—Slept all night.

August 30.—Same result.

August 31.—Repeated dose, with same effect.

CASE XII.—Lizzie K. Facial neuralgia. Suffers great pain in the side of her face, the pain increasing in severity. Ordered dogwood, ʒss, morning of August 31, and by afternoon she was much more comfortable; repeated dose at night; patient slept fairly well.

September 1, 2, and 3.—Gave ʒi doses each night; patient slept well all night.

CASE XIII.—Edward S. Suddenly taken night of September 5 with severe pains in the abdomen, vomiting, cramps, all pointing to an attack of cholera morbus. I gave him as soon as possible ʒss dogwood, and repeated dose in half an hour. Before the second dose had been taken the cramps had lessened, the pain greatly diminished, and, after the second, he fell into a quiet sleep, from which he awoke the next morning feeling much better.

On night of 7th he was given another dose of dogwood, ʒi, and slept almost the entire night through, waking the next morning in a refreshed condition.

CASE XIV.—Henry J. Fell from his bed night of September 20, and sustained a fracture of two ribs. He suffered considerable pain and uneasiness, and, not wishing to give him morphine, I gave him dogwood, ʒi, and had the satisfaction of seeing him a couple of hours later in a deep sleep.

September 21, 22, 23, 24.—Was given dogwood, ʒi, on each of these dates, and always with the same result, viz., a sound sleep, and with no unpleasant after-effects.

These few cases, culled from a number of months' experience in hospital practice, have led me to express my opinion as to the value of Jamaica dogwood. I have found it to be a most excellent hypnotic and anodyne; in no one case of those in which I employed it has it failed to relieve pain and induce sleep. One great advantage connected with it is that patients, after taking it, awake with none of the unpleasant after-effects which opium induces. Not only does it relieve pain and produce sleep, but in many cases it relieves cough, notably the case in phthisis. This experience, though very limited, has induced me to become very much attached to this remedy, and in every case where such an action as comes from its use is indicated I have always employed it with most satisfactory results.

---

*SACCHARIN.**

BY L. WOLFF, M.D.†

UNDER this name a product of the coal-tar derivatives has been recently introduced for medical use. It was first produced by Dr. C. Fahlberg in 1879, who described it, together with Prof. Ira Remsen, in vol. i. page 426, of the *American Chemical Journal.*

To understand the chemistry of saccharin it is necessary to enter somewhat into the consideration of the aromatic group of hydrocarbons from which it is derived.

This series is known by the general formula of C_nH_{2n-6}; *i.e.*, every member of the group contains for the carbon atoms twice as many of hydrogen less six. The starting-point of this is benzene, C_6H_6, derived by distillation from coal-tar, and the second member toluene, C_7H_8, or methyl benzene, also written as $C_6H_5.CH_3$, another distillate from that source.

Toluene treated with sulphuric acid, H_2SO_4, so that the H adjoining the CH_3 in the hydro-

* Read at the Clinical Meeting of the Philadelphia County Medical Society, May 19, 1886.

† Demonstrator of Chemistry, Jefferson Medical College.

carbon chain will be substituted by SO_3H, yields orthotoluenesulphonic acid, expressed by the formula $C_6H_4.CH_3.SO_3H$.

This converted into orthotoluenesulphochloride, $C_6H_4.CH_3.SO_2Cl$, and treated with ammonia, NH_3, gives orthotoluenesulphamide, $C_6H_4.CH_3.SO_2.NH_2$.

As toluene by oxidation is changed into benzoic acid, so is the toluenesulphamide changed when oxidized with potassic permanganate, $KMnO_4$, into benzoic sulphimide, or saccharin, and orthosulphobenzoate of potassium. This mixture, when treated with hydrochloric acid, HCl, leaves a precipitate of benzoic sulphimide, $C_6H_4.CO.SO_2.NH$.

This benzoic sulphimide, if treated with water, gives orthosulphaminbenzoic acid, $C_6H_4.CO_2H.SO_2NH_2$, so that saccharin may be therefore properly termed an anhydro-orthosulphaminbenzoic acid.

Saccharin, prepared in this manner, is a white powder, composed of irregular crystals. It is very slightly soluble in water, not quite half per cent. dissolving at ordinary temperatures, while it dissolves readily in warm and boiling water, from which it crystallizes out on cooling. As forming sulphaminbenzoic acid when so dissolved, it has an acid reaction. It is readily soluble in alcohol and ether. Its salts, with the hydrates or carbonates of the alkaline metals, are readily soluble, but saccharin is separated out from such solutions on the addition of acids. Heated to 220° C. it melts, and is partially decomposed, and, when fused with potassic hydrate, it forms salicylic acid. Its most remarkable property, and that which makes it of advantage to medicine, consists in its intense sweet taste, which is so great that one grain if dissolved and neutralized in about ten pints of water (1 to 70,000), can still be tasted, while one grain of cane-sugar can only be detected at the utmost when dissolved in half an ounce of water, so that saccharin is about three hundred times sweeter than sugar, the taste of which it represents entirely in quality.

Professor Mosso has recently studied the physiological effect of saccharin, and published the results in the *Archivo per le Scienze Mediche*, vol. ix., 1886. According to his researches, it is not, like benzoic or salicylic acids, excreted in the urine as hippuric or salicyluric acid, but is found therein in the same chemical condition as ingested. Frogs can be kept indefinitely alive in a neutralized watery solution of saccharin. When injected under the skin, the urine tastes sweet within fifteen minutes, and continues so for several days. Experiments with dogs, when saccharin is given in large doses, developed no impairment of nutrition, nor was during its use the amount of urea eliminated either increased or diminished. The urine of animals fed with saccharin is less prone to putrefaction. The amount of chlorides in the urine is increased during its use, while the phosphates and sulphates remain normal.

Animals on full diet, along with saccharin, increase in weight. On man, doses of 5 grammes (75 grs.) produce no abnormal effect, and the appetite is stated to be increased during its use. The uropoietic ways are the only eliminative tract for saccharin, which makes itself manifest in the urine half an hour after its ingestion. It may be summed up, therefore, that saccharin is not possessed of any toxic or deleterious effect on the human organism.

In therapeutics this new substance is destined principally as a corrective for the taste of other substances, and as a condiment for the use of persons suffering from diabetes mellitus, and those under treatment for the reduction of obesity.

In several experiments that I have made, I found it to correct the bitter taste of quinine materially if one part of it is added to two parts of the latter. As its solution forms an acid, which readily forms salts with bases, it can be utilized to combine directly with alkaloidal quinine to form a quinine sulphaminbenzoate.

In fermentative disturbances of the digestive tract, when sugar and carbohydrates are contraindicated, it may be used as a corrective for the nauseant taste of other remedies, especially so as it has decided antiseptic powers. It may also be used as a condiment for milk and other nutriments to be taken. To improve the taste of elixirs, wines, etc., it seems especially fitted, as they will under such conditions have the very desirable property of not deranging the stomach. The coffee and tea of diabetic patients may be sweetened with a grain or two of saccharin, and it may also be added with advantage to jellies and other foods for such patients.

That saccharin has a place in medicine and in the dietary list is undoubted, and that it is innocent in its effect commends it especially to a trial by physicians.

333 South Twelfth Street, Philadelphia.

ON THE DISCOVERY OF THE MYDRIATIC ACTION OF THE SOLANACEÆ.

By Dr. Rud. Kobert.*

THERE can be no doubt that the discovery of the mydriatic action of certain solanaceæ was a matter of great importance for therapeutic practice. Nevertheless, there exists a singular uncertainty, if not confusion, as to the time of this discovery and as to the discoverer himself. In fact, there is not a single book published in German, French, or English, in which I can find reliable data in regard to this matter.†

In order to mend this defect, I beg leave to gather for a historical discussion all pertinent material, which, as may be presumed, is no light task.

The Greeks and Romans understood by mydriasis a condition of visual weakness, together with a dilatation of the pupil. This definition can be found in Paulus Ægineta (iii. 22),‡ Celsus (vi. 6), and Isagoges; and is probably derived from the peculiar condition of visual weakness and pupillary dilatation invariably to be found in glaucoma. Some few authors, as Aëtius, designate improperly, also, other pathological conditions of the eye, such as phthisis bulbi, as mydriasis. In the presently accepted meaning—*i.e.*, dilatation of the pupils §—the word appears to have been first used by Cælius Aurelianus (Chron. ii., p. 344).

The first mention of a mydriasis produced by preparations of solanaceæ ‖ we find in Galen's third volume of Methodus Medendi (Edit. Kühn, tom. x., Lipsiæ, 1825, p. 171). This author states in the second chapter of the quoted volume that grave visual interferences and mydriasis may result by a too intensive local application of drugs containing mandragora or hyoscyamus. Dioscorides and Plinius Secundus do not appear to have known anything of this action, at least these writers never mention it, while mydriasis itself occurs in Pliny, who even mentions an artificial production of mydriasis by the seeds of anagallis. Galen, therefore, is unquestionably the first author who refers to the mydriatic action of two species of solanaceæ. Still, his in every way correct statement appears to have been wholly forgotten, for no subsequent writer ever speaks of this action, which fifteen hundred years later had to be discovered anew.¶

In 1686, Dr. Ray, a famous English physician, reported in his Historia Plantarum (vol. i. p. 680) that a lady coming under his observation had placed upon a small ulcer beneath the eye a belladonna-leaf, and had afterwards been annoyed by an excessive dilatation of the pupil. Simultaneously the lady lost entirely the power of the pupil to react on light. The physician regarded this defect at first as a matter of accident, until a repetition of the belladonna application taught him that a dilatation of the pupil and loss of reactive power for several days were the physiological effects of belladonna.

But this second discovery also was again forgotten, although Ray's work was largely read. Thus, Boerhave (1668–1738), however familiar with medical literature, says in his book De Morbis Nervorum (p. 371), expressively that the juice of belladonna had no influence upon the eye, while Van Swieten, in his commentary of Boerhave's Aphorisms (vol. iii. p. 363), quotes Ray's case. And quite independently of Ray's observation, Evers reported in the *Berliner Sammlung*, 1773, vol. v. p. 565,** that he noticed in six persons hebetudo oculorum and dilatatio pupillæ as symptoms of the belladonna intoxication. Evers must accordingly be mentioned as the third discoverer of the mydriatic power of belladonna. Three years later the following case of poisoning occurred at

* Professor of the History of Medicine and Pharmacology in Dorpat, Russia.

† The statements of A. Hirsch in the History of Ophthalmology (Graefe-Saemisch, Textbook of Ophthalmology, vol. vii. p. 235), appearing to be more trustworthy than those of other authors, have been adopted in the main in this paper.

‡ This interesting passage is rendered by Adams as follows: When the pupil does not appear changed in color, but much wider than natural, and when it sometimes wholly impairs the vision, and sometimes nearly so, and when every object appears smaller, the affection is called mydriasis. The cause of it is some redundant humor.

§ The word pupil, with its present signification, was used by Cicero (De Natura Deorum, ii. 57), who derives it from pupula, a little doll.

‖ The identification of the solanaceæ of the ancients is a difficult and as yet but partially-solved problem, *vide* Sprengel (Ped. Dioscorides de Mat Med., Lipsiæ, 1829, pp. 602–605), Francis Adams (Paulus Ægineta, London, 1847, ii. pp. 218–19, and iii. p. 290), and Imbert Gourbeyre (Recherches sur les Solanum des Anciens, Paris, 1884). For our purposes it is of importance to know that all of the species in question have a mydriatic action.

¶ Ebn, Baithar, and Paulus Ægineta, know positively nothing of this action.

** Gmelin states, in his General History of Vegetable Poisons (Nuremberg, 1777), p. 301, that already in 1765 he had noticed mydriasis as one of the symptoms of belladonna-poisoning, but he does not appear to regard this symptom as characteristic, but rather as an incidental one, for, in reviewing all symptoms, he omits this one.

Hamburg. A physician of repute, Dr. Reimarus, had ordered in a drug-store belladonna. The nephew of the apothecary, Johannes Andreas Daries (De Atropa Belladonna, Dissert. Inaug. Auctore Petro Joanne Andrea Daries. Lipsiæ, 1776. Reprinted in Ballinger's Sylloge, vol. ii. p. 58), who prepared the prescription from the fresh plant, had a drop of the juice of the berries, or of the herb, accidentally get into his right eye. Very soon after this accident he was troubled by mydriasis and considerable visual interferences. Reimarus, informed by letter of the druggist's trouble, wrote that he was aware that the ingestion of large quantities of belladonna produced mydriasis, but that he was surprised to learn that the external application of the drug could likewise produce this result. This was, however, Reimarus added, a very interesting matter, and invited decidedly to therapeutic trials of the drug in cataract operations. But even before the arrival of this letter, Daries ascertained, by experiments on a cat, that the fresh juice of the herb and of the berries of belladonna had actually a mydriatic power. Hence Daries is to be designated as the fourth discoverer of the mydriatic action of belladonna.

About the same time, or a little later, Doederlein* observed in his practice a case recalling that one of Ray mentioned above. A patient having placed a leaf of datura stramonium upon an ulcer near the eye, was soon affected with a complete paralysis of the pupil. Doederlein interpreted this mydriasis very correctly as the action of stramonium, and is accordingly to be regarded as the fifth discoverer of this action. Independently of him, Schiferli,† following the example of his preceptor Loder, who appears to have found the belladonna action for himself, used and recommended in 1796 an infusion of belladonna for cataract extraction. Loder is consequently the sixth discoverer of this action.

After this time the specific action of belladonna upon the eye became generally known in Germany and in other countries.

Thus, we find it mentioned as something generally known in Tromsdorf's Pharmacological Dictionary (Hamburg and Leipzig, 1802, vol. i. p. 299). The action of hyoscyamus was discovered by Himly in 1800 from botanical deductions, and was warmly recommended for ophthalmological purposes.‡ Ehlers,§ one of his pupils, translated the publication of Himly in question into French, but, either on purpose or by mistake, always wrote belladonna instead of hyoscyamus, inducing thus the French physicians to employ belladonna therapeutically. In the second French edition, however, appearing 1803 in Altona, the word jusquiame is used instead of belladonna. In England, Paget‖ recommended the belladonna application for cataract extraction.

In lay circles, however, the mydriatic action of the solanaceæ was in the beginning of this century still wholly unknown, and was anew discovered by Runge, the discoverer of the aniline colors. This chemist makes, in his Chemischen Briefen,¶ the following interesting communication:

"In Jena I became soon acquainted with Döbereiner, and discussed with him my researches about vegetable poisons, especially the solanaceæ. Döbereiner appeared pleased with the methods instituted by me and the results of my investigations; he constantly stimulated me to new researches. About this time I met Goethe, at the instigation of Döbereiner, who had told the poet that by experiments upon cats I had found a method of ascertaining with certainty whether or not a poisoning with stramonium had occurred. Goethe had thereupon expressed the desire to meet the young chemist, and to see the demonstration of his discovery. When I crossed the market square in the afternoon, dressed with a borrowed frock coat and stovepipe hat, and carrying the cat under my arm, I created a universal sensation. The boys, who were loitering about the place, at the cry 'Doctor Poison!' suddenly came towards me, and surrounded me. To those joking at my fantastic appearance I said, 'Let me in peace. I am attending to some important business. I am going to Goethe.' I was instantly released. Coming to Goethe's house, I was led

* Conrad Moench, Lehre von den Arzneimitteln, Marburg, 1795, p. 337. Moench, by the way, was quite familiar with the publications of Ray and Daries.

† Rud. Abraham Schiferli, Dissertatio de Cataracta, Jenæ, 1796; and Theoretical Practical Treatise on Cataract, Jena and Leipzig, 1797, p. 85. He was military surgeon, later professor of surgery, and died as such in Bern in 1837.

‡ Ophthalmolog. Beobachtungen und Untersuchungen, Bremen, vol. i. p. 1.

§ De la Paralysie de l'Iris occasionée par Application locale de la Belladone, et de son Utilité dans le Traitement de divers Maladies des Yeux, par Himly, trad. par Emil August Ehlers, Paris, 1802.

‖ *London Med. and Phys. Journal*, 1801, vi. p. 352; cf. *Edinburgh Med. and Surg. Journal*, 1813, ix. p. 279.

¶ This book is wholly unobtainable in the book market. A brief abstract of it appeared in the *Pharmac. Handelsblatt*, 1885, p. 23.

into the reception-room, and soon stood before the poet. His lofty, handsome, and powerful presence made such an overwhelming impression upon me, that, all in a tremble, I handed him the cat, as if I wanted thus to defend myself. 'Ah! So,' Goethe said, 'that's what is going to be the future terror of the poison-mixers. Just let me look.' I then turned the cat's head so that the light struck both eyes simultaneously, and the difference between the eyes could be readily seen. Goethe was greatly surprised. Alongside of the small slit in one eye, the round great opening in the other presented a very striking difference. In consequence of a somewhat large dose, the entire iris had almost become invisible, thus enhancing this singular aspect. 'How did you obtain this effect?' asked Goethe. 'With hyoscyamus, your excellency,' I answered. 'I have placed the unmixed juice of the pounded herb in the eye, therefore the action is so strong.' 'Döbereiner told me,' said Goethe, 'that both belladonna and stramonium act alike, and that you have ascertained that the active toxic principle is contained in the plant in all of its parts, from the root to the blossom, fruit, and seed. How is it with other plants, especially those of an affiliated relation?' 'A friend of mine, Dr. Carl Heise, induced by the peculiar action of the stated plants, has shown in an elaborate work that only the plants of the three orders mentioned above affect the pupils in a mydriatic manner. He has tried the action of innumerable other plants on the eye, and found them all to be inert save a few which produced the reverse of mydriasis, viz., a contraction of the pupil, such as aconitum.' 'Well,' Goethe said, 'there is a chance to discover the proper antidote for the toxic action of belladonna. Try this, and apply both antagonistic plants either simultaneously or one after another to the eyes of a cat. Observe the result. The matter is not without difficulties, but you will overcome these. But now, pray tell me, how you came to this peculiar kind of organic chemistry?'" Runge related: "In 1810 I was—a pastor's son, from the country near Hamburg—sent to Lübeck, and placed in the Rathsapotheke as an apprentice. It was a warlike time, and Napoleon prepared his invasion of Russia. All men able to carry arms were mustered out, and, on account of the universal unwillingness to serve under the tyrant, it was a matter of difficulty to find a substitute. Through recommendation of my uncle, I had received admission into several aristocratic families, and the son of one of them became a friend of mine. One evening he came to the drug-store in great commotion, and told me his trouble, that the day after to-morrow he had to present himself for service, and that, being without physical defect, he probably would be taken. 'I would like to mutilate my hand,' he sighed, 'in order not to go into this ignominious war.' 'That is not necessary,' I said. 'Confide in me. I believe to be able to mutilate you for a short time with impunity. They will have to exempt you from service.' 'What are you going to do with me?' 'I will make you blind for twenty-four hours.' 'How are you going to do that?' 'Listen to me. About eight weeks ago I had to prepare a medicine, according to a doctor's prescription, in which a decoction of the juice of hyoscyamus was to be dissolved in water. Preparing the medicine in a mortar, a drop accidentally got into my eye. I experienced no pain, and did not observe any alteration until sensations of light flashes caused me to go to the looking-glass. How great was my astonishment when I saw the change that had taken place in my eye. The iris had almost wholly disappeared, and the eye looked precisely like that of a man suffering from amaurosis. The power of vision was also greatly weakened, as I noticed when I closed the unaffected eye. I don't know why this state of things did not raise any fears in me. After lasting a few days, the abnormal condition disappeared, the power of vision returned, and also the normal proportions of the iris, so that both pupils appeared again of equal size. And behold! such an affection I will produce in both of your eyes, and it would be very queer if you would not be discharged, even after a superficial examination.' After making some easily-removed objections, my friend consented to this at that time very pardonable fraud, and thus saved his life, for of all men that went from Lübeck to the war in Russia but few returned. His temporary blindness lasted thirty-six hours, passed away painlessly, without leaving behind any deleterious results."

Thus far goes the report of Runge, from which we can distinctly see that he obtained the knowledge of the mydriatic action of the solanaceæ by the same accident as Daries derived his knowledge. Runge is consequently the seventh discoverer of this action. He tried even to practically utilize his discovery at once; for he recommended in his dissertation (De Novo Methodo Veneficium Dijudicandi, Jenæ, 1819) in a case of suspected atropine intoxication to place a

drop of the urine of the poisoned person into the eye of a cat. The word atropine does not seem to have been known to Runge, for the solanacea alkaloid, isolated approximately by him, he calls koromegyn (Greek, magnifier of pupil). This alkaloid was isolated in 1830 properly by the apothecary Mein,* of Neustadt-Göders, and independently of him in 1832 by Geiger and Hesse,† while Liebig ‡ determined its chemical formula. The solution of the pure sulphate of atropine, instead of the extract of belladonna, was at once used by Geiger § and Hesse for the purpose of dilating the pupil. The named chemists succeeded soon ‖ after also in isolating hyoscyamine, the active principle of hyoscyamus. They showed that this alkaloid, like atropine, had a distinctly mydriatic action even in a dilution of 1 to 1000.

In the majority of books treating of these historical facts, such as in Hirsch's History of Ophthalmology, and in Hirsch's Latest Discoveries of Materia Medica, Heidelberg and Leipzig, 1843, vol. ii. p. 160, we find the statement that the complete isolation of atropine and hyoscyamus occurred in the first half of the second decade of this century, and was obtained by Brandes and Runge. This, however, is wholly untrue.¶ For all those cases referred only to purified extracts but not to chemically pure alkaloids. After the mydriatic action of the solanaceæ alkaloids was positively made out, and had become generally known, their physiological *modus operandi* had to be determined.

Ernst Heinrich, as early as 1821, stated in his famous paper, De Motor Iridis (p. 102), that belladonna paralyzes the nerves of the muscular sphincter iridis. This view was confirmed by the experiments of Biffi (1845), Cramer and Ruiter (1853), and is now held exclusively by all ophthalmologists. Nevertheless, this view is only partially correct, for the most recent students of pharmacology have demonstrated that we have to deal here only with a paralysis of the peripheral ends of the nervus oculo-motorius, while the nervus sympathicus supplying the musculus dilator remains absolutely unaffected.

Fraser, of Edinburgh, discovered in 1861 the only practically applicable medium of pupillary contraction, viz., physostigmine or the extract of Calabar bean. Pilocarpine, muscarine, and nicotine likewise contract the pupil, but this contraction is in intensity and extent far inferior to that produced by physostigmine, and is of little practical importance.

* Liebig's Annalen, vol. vi. p. 67.
† Ibid., vol. v. p. 38. ‡ Ibid., vol. vi., 1833, p. 66.
§ Ibid., p. 68. ‖ Ibid., vol. vii., 1839, p. 271.
¶ Equally erroneous is the statement that Reisinger (Bayerisch's Annalen; Abhandlungen aus den Gebiete der Chirurgie, Sulzbach, 1827; also *Salzburger Med. Chir. Zeitung*, 1825, No. 14, p. 237, and No. 15, p. 253) in 1824 had used the pure alkaloids of solanaceæ.

A FEW EXPERIMENTS WITH LIQUOR POTASSII ARSENITIS.

By M. F. Weymann, M.D.

As all the compounds of potassium are claimed to have essentially the same physiological influence on animal tissues, it would, no doubt, be very interesting to assign in the course of this article a special action to the base of the drug. No such attempt, however, has been made, but the medicine simply treated as an independent entity. As for the administration, it was practised *per os*, by injection into the subcutaneous lymph-spaces and into the posterior lymph-hearts directly. All experiments—ten in number—were performed on the frog.

The first signs appearing were unusual activity and restlessness. These, however, abated after the animal had made one or two rounds along the four walls of the room, and were, no doubt, due to the irritation of the local application of the solution. Now a new train of symptoms announced itself by an almost sudden quietude. This quickness of action was, of course, more marked after injection into the lymph-hearts. The batrachian leaped only now and then, remaining in a stupor-like condition between the efforts. The jumping was less energetic, and soon difficulty in controlling the posterior extremities showed itself. Extension was incoordinate, and retraction slow and seemingly very labored. The animal now usually got in some corner. Movements became extremely rare. Indifference deepened into stupor. The animal would not only refuse to move on being approached, but even touching failed to elicit any response. After a comparatively short time even painful stimulation was without result. Pinching and striking violently only now and then produced a weak stirring. Still, at larger intervals, the frog made spontaneous movements, by far more perfect than any of those produced by irritation. And what seems even more strange, he would, if placed on his back,

try to regain his original position with a certain readiness generally successful. But even those attempts dwindled into a mere nothing at a time when pretty perfect voluntary movements could yet be observed.

The movements of the heart were greatly accelerated and weakened. Respiration was not notably affected, and this would only be in accord with the fact that in human arsenical poisoning the shallow and hurried respiration is only due to the abdominal tenderness developed from local irritation. Breathing ceased, however, before the circulatory apparatus came to a stand-still. As the doses given were very large, death generally appeared before the lapse of forty-five minutes. This fact may also explain the absence of convulsions in all cases, except a *clonic* shivering in one.

Considering the action of the drug on the tissues *seriatim*, the nervous system claims our first attention.

If a frog be poisoned with the solution, and the vessels of one hind leg tied, the peripheral nerve ends of that member must be exempt from the influence of the poison. Soon the symptoms of paralysis appear. That the latter is not due to a laming of the motor power may be proven by the occasional occurrence of voluntary motion. The paralysis must consequently be induced by sensory inability. If now irritation of the poisoned leg fail to bring about movement, this failure will be just as apparent in the protected leg, although its sensory fibres are intact. This experiment was verified by ligaturing the whole leg, and even severing all except the nervous connection. The result was uniformly the same, therefore sensory paralysis cannot be peripheral. During this stage the motor nerves fully respond to electricity, showing the trunks to be in order. This fact makes it very improbable that the sensory fibres of the same nerve should be killed. Excluding those two possible sources of paralysis, only one—*i.e.*, the spinal cord—is left as the sole cause of the mischief. Its sensory cells are killed, and unable to transform perceptions into motor impulses any longer.

Contrary to the statements of Drs. Murrell and Ringer, motor disturbance was not noted in any case. Galvanization of the nerves promptly resulted in movement. That there was no spinal trouble, or, at least, no complete paralysis, was shown by occasional volitional contractions of the muscles. Still, a certain depressing influence on the motor cells cannot be denied. The difficulty and perfection accompanying, in the later stages, the execution of its functions, clearly point to that effect. Additional corroborative evidence is afforded by the depression after local applications.

An influence not yet thoroughly appreciated refers, I think, to the cranial nervous centres. All higher functions must be profoundly depressed. The batrachian exhibits no fear on being approached, although our inferences from human poisoning would not warrant the conclusion that disordered vision or blindness prevails. That the centre of coordination is very severely impressed is shown by the inco-ordinate movements. Although there is a will and a motor apparatus to execute it, the motor machine lacks that predominating, regulating influence called coordination. This is at first only manifested in parts of the system, viz., groups of muscular tissue. Soon, however, the centre even ceases to respond to so profound a stimulation as is afforded by an inverted position, although in the mean time disordered volitional impulses may be observed. If we take into consideration this peculiar influence exerted on the cranial nervous matter, the mysterious action of therapeutic doses of the drug as an alterative would at once be more easily understood, particularly if we are liberal with cranial centres, such as that of nutrition.

That arsenite of potassium works by absorption has been proven repeatedly. Aside from this, it has, however, a local influence. Applied to the heart directly, it first increases the pulse-rate and then diminishes systolic force. If one experiment be sufficient, these phenomena are not to be accounted for by paralysis of the vagi, as galvanization of those nerves produced very visible effects. The main factor seems to be weakness of the heart-muscle. Moreover, this fact is confirmed by a similar behavior of the excised viscus. The whole organ becomes enormously distended, and towards death the contractions resemble a mere shivering. If, however, the ventricular walls be cut, and the cavities so relieved from overdistention, the heart once more becomes regular, only to cease again in a short while. That the resumption of cardiac action is not merely the consequence of the mechanical stimulation of cutting seems very likely, because the muscle would not previously answer to galvanic stimuli. The force gradually is lost, but if a more than proportionate diminution of labor is con-

nected with it (as cutting of the walls certainly is), a *seeming* restoration of force follows. Another proof for weakness of muscular tissue lies with the fact that the ventricles must often rest. Irregularity is sometimes so pronounced that four auricular contractions are followed by one ventricular systole.

In view of these facts, we would very naturally expect to find a sinking of blood-pressure. Experimenters have proven this to be a fact, some adding vaso-motor paralysis to the *status verum*, which would only so much more condition a fall of pressure. Perhaps this action explains, to a certain extent, its *modus operandi* in intermittent fever. Of course, even then we cannot leave out our favorite appellation "alterative."

These deductions show very clearly that the liquor acts very much the same as arsenic, and that the other ingredients (viz., spt. lavend.) have no perceptible influence.

THE USE OF MANACA IN RHEUMATISM.

By F. Spencer Halsey, M.D., New York.

DURING the summer of 1885, while House Physician at the Almshouse and Workhouse Hospital, Blackwell's Island, I gave the fluid extract of manaca a thorough trial in many cases of different forms of rheumatism, of which the following serve as type, and indicate the class of case in which manaca may prove of service:

Case I.—Jane S., age 49; native of Scotland; widow. Admitted to hospital May 10 with acute articular rheumatism, affecting chiefly the wrist and knee-joints, which were very tender and swollen. Suffered from slight cough, as she had only a few weeks before recovered from an attack of pneumonia. Was immediately put on a solution of sod. salicyl. of the strength of gr. xv to ʒi, of which ʒi was given every three hours until its effects were obtained. This was continued for four days, and on May 15 the salicylate was given in gr. xv doses t. i. d. for ten days. Slight improvement, pain less, and joints somewhat less swollen.

May 26.—Ordered ol. gaultheriæ, gtt. v t. i. d., and external applications.

May 28.—Ol. gaultheriæ increased to gtt. viii t. i. d.

May 30.—No change.

June 2.—Ordered fld. ext. manaca, gtt. xv t. i. d.

June 5.—Complains of tightness around waist; no marked improvement; joints still much swollen.

June 10.—Better; no tightness; swelling slightly decreased; increased manaca to ʒss t. i. d.

June 15.—Manaca increased to gtt. xl t. i. d.; swelling considerably decreased; some pain still, especially in wrists.

June 20.—Patient up, and walking around; pain very much diminished, and swelling almost entirely gone.

June 25.—Manaca given in ʒi doses; improvement marked.

July 1.—Joints in much better condition than ever before. Patient was discharged from hospital shortly after, being able to get around with little difficulty.

Case II.—Margaret W., age 54; Ireland. Admitted to hospital May 28 with chronic rheumatism, from which she had suffered for over a year. Has had two previous attacks, but not so severe as this. Both wrist and knee-joints, as well as the metacarpal and phalangeal joints of both hands, and the phalangeal joints of both feet affected. Parts swollen and very tender, so that hardly any movement was able to be made. Was immediately put on quinine, gr. ii t. i. d., and manaca, fld. ext. gtt. xxx t. i. d.

June 1.—Pain much better; able to move arms a little more freely.

June 4.—Motion freer and pain less; manaca increased to gtt. xl, and continued at that.

June 12.—Patient up, and walking about the ward very well; very little stiffness.

June 16.—Marked improvement. Very good movement of joints, attended with no pain, and treatment continued with tr. ferri chlor., gtt. x t. i. d.

June 20.—Patient discharged, with good result.

Case III.—William E., age 45; Ireland; laborer. Admitted to hospital May 1 with chronic rheumatism, affecting his knees and shoulders, which were considerably swollen, and motion attended with great pain. Was put on fld. ext. manaca, gtt. xx t. i. d., and external applications of lead and opium wash were ordered.

May 5.—No improvement; manaca increased to gtt. xxx t. i. d.

May 8.—Slight change; manaca increased to gtt. xl t. i. d.; motion freer.

May 12.—In same condition; joints swollen very much; was ordered manacâ in ʒi doses q. four hours.

May 15.—Better; can walk a little.

May 20.—Pains returned, and patient unable to move; manaca stopped, and ordered sod. salicylate in gr. xv doses q. three hours, under which he improved, and was discharged, being able to walk out of ward very well.

CASE IV.—Bernard S., aged 50 years; Germany; laborer. Admitted to hospital June 17 with chronic rheumatism, attacks of which he has had off and on for the past five years. Ordered fld. ext. manaca in doses of gtt. xx t. i. d.

June 19.—No change; manaca increased to ʒss t. i. d.

June 20.—Slightly improved; can move freer; manaca ordered to be given in gtt. xl doses, with local applications.

June 22.—No better; manaca ʒi t. i. d.

June 25.—Pain in hands and feet worse; unable to sleep; complains of headache and pain in eyes; manaca pushed to ʒii.

June 27.—Pain in head worse; dizzy at times; rheumatism no better; manaca stopped, and patient put on ol. gaultheriæ, gtt. v. t. i. d.

June 29.—Better; ol. gault. increased to gtt. viii, also used externally in ointment.

July 1.—Patient walking about with cane; pain in head gone; swelling of joints less, and more motion. Continued for a week longer, and on July 10 was discharged, greatly improved.

CASE V.—Mary E., age 40; United States. Admitted to hospital July 15 suffering from chronic rheumatism of nearly two years' duration. Ordered manaca, ʒss t. i. d., and quinine, gr. ii t. i. d.

July 18.—No change; manaca, ʒi t. i. d.

July 21.—Slight improvement; manaca increased to ʒii t. i. d.

July 23.—About the same; ordered manaca in ʒiii doses.

July 25.—Complains of dizziness and pains in head; joints no better; manaca stopped, and sod. salicyl., gr. xv t. i. d., ordered.

July 29.—Better; can get around ward fairly well.

July 31.—Patient discharged, time up, in improved condition.

CASE VI.—Edward R., aged 56; Ireland. Admitted to hospital August 15. Has suffered from rheumatism, off and on, for the past three years, his feet and hands being chiefly affected. Feet swell up so that he is unable at times to put on his shoes; no kidney nor cardiac trouble; was put on manaca, gtt. xx t. i. d., and tonics.

August 18.—Improving; manaca, ʒss.

August 20.—Feet better; got shoes on today for the first time in over three weeks; manaca, ʒi.

August 23.—Improvement continues; pain and swelling entirely gone; manaca, ʒiss, ordered, and tr. ferri chlor., gtt. xv t. i. d.

August 25.—Same condition.

August 26.—Motion freer; joints in better condition; continued treatment.

August 29.—Walks around ward with more ease than he has for several weeks; swelling all gone from feet, and general condition greatly improved.

September 2.—Discharged; good result.

CASE VII.—James W., Englishman; age, 40. Admitted to hospital August 25 with chronic rheumatism in knees, ankles, and wrists. Unable to walk, except with very great difficulty and pain, for over two months. Was put on sod. salicyl., gr. xv t. i. d., and lead and opium wash ordered locally.

August 28.—No change; salicylate increased to gr. xx.

September 1.—Complains of headache and ringing in ears; joints no better; still suffers much pain; treatment changed, and manaca ordered in ʒss doses.

September 3.—Pain less; manaca given in ʒi doses.

September 5.—Improved; more movement of joints, with less pain and swelling; manaca now given q. i. d. in ʒi doses.

September 8.—Patient much better; walks with a cane very well.

September 10.—Improving daily; put on tr. ferri chlor., gtt. x t. i. d.

September 12.—Walked about the ward with no help to-day; swelling entirely gone; very good use of joints.

September 16.—Discharged, with exceedingly beneficial results.

Résumé of Cases.

Disease.	Sex.	Age.	Amount (Maximum).	Time.	Result.
1. Chr. rheum.	F.	49	ʒi	52 days.	Good.
2. Chr. rheum.	F.	54	gtt. xl	24 days.	Good.
3. Chr. rheum.	M.	45	ʒi	21 days.	None.
4. Chr. rheum.	M.	50	ʒii	24 days.	None.
5. Chr. rheum.	F.	40	ʒiii	17 days.	None.
6. Chr. rheum.	M.	56	ʒiss	19 days.	Good.
7. Chr. rheum.	M.	40	ʒi	22 days.	Good.

7 cases in all,—4 attended with good results, 3 attended with no results.

THE THERAPEUTIC VALUE OF ICHTHYOL.

By Dr. Joseph Schmidt, Berlin, Germany.

(Conclusion.)

IN the first part of this paper I discussed the pharmacal and physiological relations of ichthyol, and alluded to some of the uses which the new remedy had found in dermatological practice. Dr. Unna, of Hamburg, learning that I was writing about ichthyol, kindly placed at my disposal the manuscript of his as yet unpublished "Dermatologische Studien, II.," which, as the most exhaustive existing treatise on the dermatological use of ichthyol, will claim the attention of all specialists. I have to content myself with merely mentioning the principal skin-affections in which ichthyol has proven of high curative value. Of acne, rosacea, and lepra I have spoken before. Eczema, especally the so-called "nervous form" (*i.e.*, depending upon nervous lesions), deserves an especial allusion. Unna emphasizes the striking results obtained in this affection with the simultaneous external and internal employment of ichthyol. The drug proves almost of equal value in lichen urticatus, prurigo, ichthyosis, urticaria, erythema (multiforme and nodosum), zoster, herpes (progenitalis and labialis), and dermatitis herpetiformis.* In intertrigo the ichthyol ointment is likewise a certain cure, as has been repeatedly observed by myself. In erysipelas and erysipeloid conditions, recently described by Rosenbach, ichthyol in one or another form will likewise give very prompt results. In erysipelas affecting the scalp a twenty to fifty per cent. ichthyol ointment is to be used, and, if the fever be high, together with the ice-bag, although the latter checks the absorption of the remedy. The ichthyol-alcohol-ether spray is, however, a more eligible application, and is to precede the ice-bag. If the erysipelas affects the extremities, Unna recommends the following formula:

℞ Ammon. sulfo-ichthyolici,
Spir. ætherei, ää ʒiiss;
Collodii, ʒv. M.
Brush to be inserted in the cork.

In lupus and sykosis, ichthyol can only be regarded as an auxiliary remedy.

In the broad condylomata and keloids our remedy, employed with the brush or in the soap-form, has given moderately good results.

More gratifying is the effect of ichthyol when applied to the extensive, deep cicatrices of the face, as often seen after smallpox and acne. Daily brushing with a strong ichthyol ointment or the ichthyol collodium will produce a firm mask-like crust on the entire face, which, when falling off, will leave behind a softer skin and more shallow marks. Dr. Schlossberger † has treated in this manner the face of a smallpox patient with an unexpected success.

The value of ichthyol in burns claims the earnest attention of every practitioner. The principal features of this employment are the avoidance of vesication (provided the remedy is applied at once) and the alleviation of pain. In burns of the first degree all symptoms can be removed in a very short time by an immediate application. If burns of a more intense form are partially treated with ichthyol it can be readily seen that the ichthyolized portions *present no vesication*, while the unmedicated places present the typical picture of burns of the second degree. The ichthyol application either removes all morbid symptoms or reduces the burn of the second degree to one of the first degree; pain invariably disappears soon after the application of the drug. Numerous authoritative observers agreeing in the unrivalled value of ichthyol in burns, it is fair to assume that this remedy will replace all other therapeutic measures of a lesser efficacy.

Next to burns, the usefulness of ichthyol is most pronounced in the removal of swellings of a traumatic and rheumatic kind. I have used the drug in about two dozen cases of this kind, and can testify to its remarkable efficacy. The affected parts are to be washed first with lukewarm water (to open the pores), and then the solution is to be applied on a piece of cotton. Thorough rubbing is a greater requisite than the application of a large quantity of the drug. After the application the parts are to be dressed in the ordinary manner; in rheumatism with cotton, preferably. One application pro die is usually sufficient, provided the drug is well rubbed into the parts. Pain and swelling invariably yield to the drug, and a couple of days suffice in most instances to eliminate all morbid symptoms. In two cases of a rheumatic swelling of the ankle-joints, a single application followed by a cotton dressing removed pain and swelling on the third day.

It is claimed that the drug is a specific antirheumatic of the highest value, and that its

* Quite recently described by Prof. Duhring, of the University of Pennsylvania.

† On board steamship "Polynesia."

greatest efficacy in rheumatism is obtained from its combined external and internal application. Having no personal experience with the internal administration of ichthyol in rheumatism, I refrain from expressing any opinion on this point, though it is true that Prof. Schweninger, of Berlin, in a letter addressed to the Ichthyol Company of Hamburg, states that in his experience "ichthyol is an anti-rheumatic of the first rank," and that Prince Bismarck has permitted him to announce that the preparations of ichthyol have invariably given him the promptest relief in rheumatism, *ischias*, lumbago, and contusions.

It is clear that a recommendation coming from such a source must go far—in Germany, at least—in popularizing the new remedy.

The applicability of ichthyol is so extensive that, although having discussed its uses in very many affections, there are still some remaining which demand an allusion.

The drug possesses pronounced styptic qualities, and is consequently useful in all hemorrhages and wounds. The ichthyol plaster which I have tried gave better results than any other medicinal plaster used in cuts and wounds. The sticking quality of the ichthyol plaster is so intense that it does not fall off the part even when being washed.

In conclusion, I can state that even in toothache ichthyol has in my hands sustained its character of a prompt relief-bringing remedy. A drop or two of a combination of ichthyol and chloroform (one to three) placed on a piece of cotton in the hollow of the tooth, or rubbed into the adjacent gum, is certain to bring almost instantaneous relief.

I have no doubt that this new remedy, endowed with the highest of healing powers, will find a fair trial with the American practitioners, and will in time become as popular in America as it is in Europe.

SOME REMARKS ON THE TREATMENT OF THE SUMMER GASTRO-INTESTINAL DISEASES OF CHILDHOOD.

By J. H. Musser, M.D., Philadelphia.

THE outlines of treatment herein indicated have been so eminently satisfactory to the writer during the past four years that it was thought they would be of interest to the profession. No claims to originality are made for the methods, and doubtless the reader will observe only a repetition of what has been said before. Their repetition is ventured upon, however, because of their great value in the writer's experience. The essential to success is the selection and pursuit of a systemic plan of treatment in cases of summer intestinal disorders. This, above all, is insisted upon.

The summer disorders of childhood are vomiting (acute and chronic indigestion), simple diarrhœa, entero-colitis, and cholera infantum. Vomiting and simple diarrhœa often are present in the same subject and due to the same causes. The causes in general of all these complaints are extreme heat, improper food, atmospheric changes (cold and dampness), a vitiated atmosphere, and reflex irritation from teething, etc. One or more of these causes preponderates in the respective affections. Their universal presence in various degrees in all the complaints renders it necessary to base a treatment of the ailment on a removal or counter-action of these general evil influences. What should be done is patent, and therefore, bearing this in mind, the outlines of treatment will be presented. The management common to all these affections will be detailed, and then some few remarks made on the therapeutics of the individual affections.

GENERAL MANAGEMENT OF THE SUMMER GASTRO-INTESTINAL DISEASES.

Diet.—The simplest and blandest articles of nourishment are ordered. In an acute case, as acute vomiting or cholera infantum, the child is taken from the breast, or the usual milk or artificial food is removed, and weak rice-water or barley-water given. The happiest results are often seen in the use of these simple means for twenty-four or forty-eight hours. In cholera infantum, brandy alone well diluted is used if the rice-water is not retained or the stage of collapse is imminent. In fact, for twenty-four or forty-eight hours, brandy, sometimes in incredible doses, is given. Five to twenty and thirty drops every half-hour or hour are frequently ordered. After the stomach has regained its strength, stronger nourishment may be used. Four things are relied on,—1. Cream, a teaspoonful to three ounces of warmed water every hour or two, gradually increasing the strength; 2. Milk, peptonized according to the Fairchild method; 3. The well-known gelatin, cream and milk preparation, recommended by Meigs and Pepper; 4. weak chicken-broth. In the more chronic summer ailments this dietary may be resorted to alone. Flour, boiled and baked in a bag until very hard, grated fine and added to milk, is of great service. Not much confi-

dence is placed by the writer in the artificial foods or condensed milk. They are of inestimable value under circumstances which prevent the preparation of the above articles. A careful mother, it always seemed to the writer, can supply from her own kitchen the foods which are heralded forth with so much mystery. The suggestions of Keating, Meigs, and many others give timely aid to the anxious mother in the making of foods. It is true, if the parent does not have a refrigerator to keep the milk, and other essential utensils, or the simple knowledge to cook properly, condensed milk or some "infant's food" are necessary.

Bathing.—Bathing is used to reduce the temperature, for derivative purposes, and for the sake of cleanliness. Children in close quarters during the hot weather, with even an ordinary gastro-intestinal affection, are ordered to be bathed in warm or tepid water every two hours, and encouraged to remain in the bath some time. Certain cases of cholera infantum, presenting cerebral symptoms not unlike thermic fever, have hyperpyrexia, due to excessive heat. To reduce the temperature is important. Cloths wrung out of ice-water and applied to the head, spine, and abdomen may suffice. Careful spongings with water and alcohol are of eminent service. Cold baths, the patient being placed in a bath at 100°, reducing gradually to 60°, are at times necessary. It has not been the writer's lot to resort to this method often. It is our only hope in some cases, however. For derivative purposes the general warm bath is used. It should be used, if there is fever, irritability, and sufficient strength, two or three times daily. If there is much exhaustion, the baths for cleanliness should be made stimulating by the addition of salt, whiskey, or alcohol. Sea-salt has been of service.

External Derivatives.—They are important. A weak mustard-plaster, the familiar spice-plaster, or flannel dipped in Jamaica ginger (℥i) in hot water (℥iii), applied to the abdomen, may be used. Hot foot-baths and mustard foot-baths are of great value. If there is fever and irritability, frequent foot-baths are ordered, and their good action is manifest in quieting the perturbed nervous system. It is of prime importance to keep the abdomen protected. When the stimulating applications are not used, warmed flannel, well fitting, is kept on. The extremities, too, must be protected. Long stockings should be worn, or the feet otherwise clad. In entero-colitis and chronic diarrhœa these precautions are almost essential to successful management.

Inunctions.—They are of extreme value, and have saved life in many of the writer's cases. Not only is the absorption of the oil of service, but, doubtless, by the gentle manipulation, all the advantages of massage are secured. In the acute or subacute affections, without fever, inunctions are begun at once. In the stage of extreme prostration after cholera infantum, or in the marasmic state that is so liable to ensue, its effects are often magical. Cases of indigestion (chronic vomiting) respond rapidly to this form of nourishment. Inunctions are especially indicated in every case in which there is gradual but palpable failure in strength and loss of flesh. In fact, it may be said, in every case of summer affections, either baths or oil inunctions are used by the writer, and the latter in all cases in which the former is not more strongly indicated. The only possible exception to this is in cases of sthenic entero-colitis, but if there is much debility following, inunctions are ordered. In many cases the baths and inunctions are used, the baths until the acute febrile symptoms have subsided, the inunctions subsequently. The writer orders cod-liver oil once or twice daily, gently rubbed in, and every second day a cleansing bath of alcohol and water. It is of advantage sometimes to anoint with oil at night, and use the cleansing bath in the morning.

Stimulants.—But little need be said of stimulants. They are indicated on general principles, and are of great service not only in cholera infantum, as previously indicated, but in other affections. In gastric affections, a good claret or sherry or whiskey are the best. In diarrhœa, burnt brandy, port, or some astringent cordials, as home-made blackberry wine, may replace the others.

MEDICINAL TREATMENT OF THE SUMMER GASTRO-INTESTINAL DISEASES.

While important, the writer is disposed to think its value is secondary to that of the hygienic management. Certain it is that more cases will get well with the management indicated above without medicines than with medicines and a disregard for hygienic and dietetic principles. The selection of remedies is usually based by most practitioners on the symptoms. Theories of the nature of the disease guide others, and, if they were based on facts, would be the true indications for rational treatment. The theory of the ptomaïnes is becoming more and more a reality, and

if it is proven as the basis of many intestinal disorders, our treatment must be carried on in accordance with such views. Granting it, the plan to pursue is to prevent abnormal decomposition of ingesta in the stomach, to prevent abnormal decomposition in the intestines, to remove the products of decomposition, and to antagonize their action. We are not sufficiently familiar with the physiological, or rather pathological, action of ptomaïnes to be able to counteract their evil influence by medicines. Much work is being done, however, and light will soon be given us. The prevention of the decomposition of ingesta and intestinal products is, we submit, effected by the selection of a proper diet. It will be seen further that calomel is a most important therapeutic agent, and what empiricism has taught we now learn from scientific experiment to be correct. No doubt the antiputrefactive power of calomel is one most important reason of its great value. Again, to remove the products of decomposition, we have in calomel a reliable agent; other remedies of a purgative or laxative nature have their place. The subsequent suggestions are made from clinical experience, and are given devoid of theory.

Vomiting, Acute.—Calomel, in small, frequently-repeated doses, is one of the best sedatives. One-eighth to one-twentieth of a grain every half-hour is ordered.* If there is fever, pain, or great restlessness, one-twelfth to one-fourth of a grain of Dover's powder may be added.† The value of the drugs is enhanced and their efficacy rendered possible only by the small size and very frequent repetition of the dose. The writer places most reliance in the calomel and Dover's powder combination. Often, in simple cases of vomiting, lime-water and whiskey are of service. For the more chronic forms of vomiting, with calomel subnitrate of bismuth is ordered; lacto-peptine, or saccharated pepsin, is often used. In some obstinate cases of vomiting my friend Dr. Gittings told the writer he has used a decoction of peach-leaves with success. He has the fresh leaves gathered, and a small handful steeped in boiling water (Oss). The water is decanted, and used freely. The writer's personal experience accords with the above. Again, a weak acid mixture, as the acid solution of pepsin devised by Schaeffer, has been of service in many of my cases. These have been cases of feeble digestion; an atonic state of the system as well as the stomach being obvious. The glycerin in the preparation may be of advantage in preventing putrefaction in these cases. The general management above indicated is all-important.

Simple Diarrhœa.—The simple astringents, the familiar antacids, the occasional use of rhubarb with an antacid, generally suffice. Jardinella's syrup, or the fluid extract of blackberry, is of great value alone or combined with other astringents. In the protracted or chronic forms, nitrate of silver in solution is of great service. Carbolic acid with bismuth, where bismuth alone failed, has been of value.

A warm abdomen and warm feet are important, as well as a proper diet and good hygiene.

Entero-colitis.—With external stimulating applications and care in diet much can be done, but some medicines must be used. These agents are resorted to,—castor oil and laudanum, rhubarb and laudanum, or quinine and calomel.

The writer usually commences at once with mist. olei ricini and laudanum, administering a dose every two hours‡ until the tormina and tenesmus are relieved and the blood and mucus flux checked. If a rhubarb mixture be used, either the sweet tincture or the spiced syrup are the best preparations. In some obstinate cases, or cases complicated with malaria, or in malarious regions, quinine, in powder or syrup, alternating with small doses of calomel and Dover's powder, is essential. As soon as the passages are free from mucus and blood, the tenesmus relieved, astringents and tonics replace the above. The writer has the notes of seven cases of entero-colitis treated with creasote with excellent effect, two resisting all other treatment previously.

Cholera Infantum.—A very successful run of cases treated by the very frequent use of Dover's powder and calomel, in small doses, dry on the tongue, has made the writer rely chiefly on these drugs. Stimulants, of course, are used. The prescription of morphine and

* ℞ Hydrarg. chlor. mit., gr. i;
Sac. lactis, gr. iii.
M. Ft. chart. No. xx.
Sig.—One every fifteen or thirty minutes dry on the tongue (infant 3 to 6 months).

† ℞ Pulv. Doveri, gr. i;
Hydrarg. chlor. mit., gr. i.
M. Ft. chart. No. xii.
Sig.—One every fifteen minutes until asleep or relieved (child 6 months).

‡ ℞ Mist. olei ricini, ℥i;
Tr. opii deod., gtt. xxiv–xl;
Ol. cinnamomi, gtt. iv–xi. M.
Sig.—Fifteen to twenty drops every two hours (infant 6 months old).

sulphuric acid, long ago advised by Meigs, is one that often checks vomiting, yet so often has the writer been disappointed, all medicine being rejected, that he resorts to placing the powders mentioned above on the tongue. They are so minute that they are readily taken into the pharynx, and the water or stimulant washes them down. If the child sleeps, the powders are not given so frequently. The writer has not had the misfortune to see the stage of collapse ensue in cholera infantum since instituting the above plans of treatment. He sorrowfully admits that he has never had any cases to recover from the cholera collapse. After the more acute symptoms of cholera infantum are controlled, tonics and astringents are used.

The writer's experience with small enemas, containing astringents and opiates, has been extremely unsatisfactory. He failed to see any benefit that could not be accounted for by the other drugs.

It is to be remarked, finally, that these methods of treatment are not to replace the removal of the sick patient to the sea-shore or mountains. They are especially for the unfortunates who cannot be removed from the depressing influences of the heat, bad air, and generally unhygienic surroundings.

3705 Powelton Ave., W. Phila.

NOTES FROM GENERAL PRACTICE.

By Francis L. Haynes, M.D.

I. Cocaine-Spray in Epistaxis, and in Nasal Surgery generally.

I. A., aged 20, suffering from a severe attack of typhoid, was troubled by frequent epistaxis. The attacks were invariably relieved by throwing into the nostrils, for a few moments, spray from a two per cent. solution of cocaine. On one occasion, copious bleeding was allowed to persist for three hours, when the spray checked it immediately. Until the patient convalesced, the spray was needed almost daily, and frequently several times a day, but the nurse never allowed more than a few drops of blood to be lost.

Four per cent. solutions of cocaine, applied freely as a spray, are efficient in preventing pain from slighter manipulations, such as the removal of gelatinous polypi. Before more severe operations, in addition to the use of a four per cent. solution by the spray, a ten per cent. solution should be accurately applied on one or more pledgets of absorbent cotton to all surfaces about to be treated, and kept in position for ten minutes. Where this is impossible, a ten per cent. spray may be used, placing the tip of the atomizer as near the seat of the disease as may be. With these precautions, I have made an incision through the whole length of the cartilaginous septum, and transfixed with Roberts' pin, the patient declaring the procedure to be painless. Operations under cocaine are attended with but little hemorrhage, thus contrasting remarkably with those performed under ether-anæsthesia.

The facility with which some of the more remote portions of the nasal cavities may be examined and treated, after the complete shrinkage of the erectile tissues produced by cocaine, needs but to be mentioned here.

Cocaine is as essential to a thorough examination of the nose as a mydriatic to that of the eye.

The spray, from the rapidity and diffuseness of its action, is undoubtedly the best method of applying the drug, for this and for many other purposes.

An atomizer made by the Davol Company ("Magic, No. 25"), I have found very useful in operations upon the pharynx and nasal passages.

1924 E. Cumberland St., Philadelphia.

HIMROD'S ASTHMA CURE.

This proprietary medicine, which has attained a certain reputation in the treatment of asthma, is said to consist of a mixture of coarsely-ground stramonium-leaves and lavender-flowers with a little benzoin, the whole sprinkled with sufficient of a saturated solution of nitrate and chlorate of potassium to make the powder burn well. Another formula consists of equal weights of powdered lobelia, stramonium, black tea, and nitrate of potassium, well mixed and sifted. Dr. Morell Mackenzie, quoting the last formula, recommends the addition of a little aniseed or fennel. A French formula advises stramonium and sage. The foregoing may or may not be identical with the proprietary article, but in any case they share with it the power of alleviating and cutting short the troublesome attacks to which sufferers from asthma are liable. It is an unsatisfactory feature of even the best remedies that they ultimately fail to produce the relief which first attended their use.—*Med. Press and Circular*, May 26, 1886.

The Therapeutic Gazette

EDITED BY
HORATIO C. WOOD, M.D.,
AND
ROBERT MEADE SMITH, M.D.,
PHILADELPHIA.

DETROIT, MICH., July 15, 1886.

GEO. S. DAVIS, Medical Publisher, Box 470.

SUBSCRIPTION RATES FOR 1886.

(Journal increased to 72 pages.)

THERAPEUTIC GAZETTE (postage included).....$2.00
THERAPEUTIC GAZETTE with MEDICAL AGE.... 2.50
THERAPEUTIC GAZETTE with AMERICAN LANCET 3.25
THERAPEUTIC GAZETTE with AGE and LANCET. 4.00

Foreign subscriptions may be ordered through our agent in England, Mr. H. K. Lewis, Medical Publisher and Bookseller, 136 Gower street, London. Price 10s. Remittances may be made either by Postal Order or Stamps.

Price to Foreign Subscribers direct (postage included) $2.50 (10 shillings). English postage stamps received on remittances.

Editorial communications should be addressed 1925 Chestnut Street, Philadelphia. Business communications should be addressed to the publisher.

Leading Articles.

NITROMURIATIC ACID AND MELANCHOLIA.

IT will possibly be remembered by our readers that we published some months ago a lecture by Dr. H. C. Wood upon Melancholia, in which the relations of the disorder with oxaluria were incidentally discussed, with the conclusion that there are two sets of cases in which there is emotional depression associated with oxaluria. In the one set the administration of nitromuriatic acid causes both the oxaluria and the melancholic feelings to disappear, while in the other set the remedy does not affect either condition. The author further called attention to the need of the study of the urine by those who in asylums meet with insane patients in numbers. This lecture has called forth a very interesting article by Dr. G. D. Stahley in the *Medical News* for June 5, in which the results of the examination of the urine of 172 patients for the oxalates are given as follows:

"Mania, 72; melancholia, 38; dementia, 41; paresis, 18; imbecile, 3. Of these 172 admitted, 32, or 18.6 per cent., showed the presence of oxalate of calcium in their urine. Dividing these cases into their respective groups, we have the following: In the 72 cases of mania we find the presence of crystals of calcium oxalate in 13, equal to 18 per cent.; in 38 cases of melancholia we find 7, equal to 18.4 per cent.; in 41 cases of dementia, 10, or 25 per cent.; in 18 cases of paresis, 2, or 11.1 per cent.; the remaining 3 cases were imbeciles, and their urine contained no oxalates. A summary of these places dementia at the head of the list with 25 per cent.; then melancholia, 18.4 per cent.; then mania, 18 per cent.; then paresis, 11.1 per cent.; and on the whole number, a percentage of 18.6."

"It appears from this showing, that if oxaluria is to be considered symptomatic of any form of mental derangement, the priority must be given to dementia and not to melancholia. It will be observed that melancholia, with its 18.4 per cent., falls somewhat short of being up to the average on the whole number, which is 18.6 per cent. In regard to the quantity of the oxalate present in each case, the examination notes credit two cases of mania and one of paresis, with an 'abundance,' and all the remaining ones are marked 'a few,' meaning the presence of one, two, or three crystals at most in each microscopic field. Of these two cases of mania, one was of the subacute form, with delusions of suspicion, and produced by alcoholic excesses; the other was an acute case, and characterized by mental confusion, restlessness, and homicidal impulses; the case of paresis was typical of that form of insanity."

"It was noticed that, on admission, oxaluria existed in 32 of these cases. Up to the present time, 15 of these have been discharged, and 17 still remain in the house. Of the 15 discharged, it is not known whether the oxaluria had disappeared or not, as no analysis was made previous to their departure. The 17 cases which still remain are divided in type as follows: Mania, 7; melancholia, 3; dementia, 6; and paresis, 1. Of the 7 cases of mania, in 3 the oxalate of calcium has disappeared from their urine; their mental condition has not improved since their admission, and we do not expect them to recover. The remaining 4 cases still exhibit some oxaluria, of which number, only one, a case of acute religious mania, admitted the last week in February, we hope to restore. Of the 3 cases of melancholia, the oxalates have disappeared in all; 1 of them is convalescent, and the other 2 present a very unfavorable prognosis. Of the 6 cases of dementia, there is an absence of oxaluria in 5, and in neither is there

the remotest chance for recovery. The sixth case, complicated with epilepsy, still contains some crystals, and presents no favorable symptoms. In the case of paresis, some calcium oxalate still remains; his prognosis is the customary one in such cases. Thus, it appears that in a total of 11 cases in which oxaluria had been present on admission, but subsequently disappeared, only 1 case is convalescent. And in a total of 6 cases in which oxaluria existed on admission, and still continues, only 1 case has any reasonable prospect of recovery."

These results are exceedingly interesting and valuable, but they do not prove, as Dr. Stahley seems to think, that there is no relation between mental depression, oxaluria, and nitromuriatic acid. Oxaluria may exist without mental depression; mental depression may exist without oxaluria; oxaluria may exist without melancholia; oxaluria and mental depression may coexist and have no relations with nitromuriatic acid; and yet there may be a form of mental depression and oxaluria having very direct therapeutic relations with nitromuriatic acid. Headache may exist without strabismus, strabismus may exist without headache; headache and acute strabismus may coexist without having any therapeutic relations with iodide of potassium, and yet the coexistence of headache and strabismus ought always to suggest the use of iodide, and often is cured by such use.

We suppose that every physician in private practice must have seen numerous cases of depression of spirits, varying in intensity, in which the oxalate of calcium does exist in the urine, and is removed by the use of nitromuriatic acid with the relief of the depression. The fact that often the oxaluria can be removed by vacation and exercise is also no proof that it cannot also be cured by nitromuriatic acid.

The relation between mental depression, oxaluria, and nitromuriatic acid is no new thing. The writer well remembers it being distinctly taught during his student life at the University of Pennsylvania a quarter of a century ago, and his own glee before graduation at the success of his application of the teaching to the case of a fellow-student. The most that can be with any degree of propriety claimed for the facts of Dr. Stahley is that they indicate that in the graver forms of insanity that are met with in asylums the oxaluria is an accident of the disease not etiologically connected with the emotional condition. He is also probably correct in believing that under these circumstances the oxaluria is frequently due to derangement of the digestive organs.

Some of the arguments of Dr. Stahley seem to us of importance, as leading up to certain conclusions, to which we have been in the last few years more and more drifting, namely, that the so-called diseases of insanity are not diseases at all, or, in other words, that melancholia, mania, and similar so-called diseases are simply symptom-groups, and that until this is recognized there can be little clear thinking about insanity. The paragraph which we have referred to reads as follows:

"And, when we find cases of melancholia associated with oxaluria, let us not be guilty of perpetrating an irrational division of the disease into two varieties, based on the fact that in the one case nitromuriatic acid dissipates both the diathesis and the disease, and that in the other it does neither. Such a division is most irrelevant and unscientific. As well divide all headaches into two varieties,—the first constituting those which are relieved by inhalations from the family camphor-bottle, and the second, those which are not influenced by this procedure."

Possibly Dr. Stahley, when age shall have cooled his youthful impetuosity, will learn that in friendly discussion of scientific questions nothing is gained by asserting that those who differ from oneself are guilty of perpetrating irrational acts, but his paragraph is an exceedingly useful one, as enabling us to illustrate the meaning probably intended by our contributor, and also some ideas which will perhaps meet with no more favor from Dr. Stahley than did oxaluria.

The paragraph seems to us to illustrate very clearly the confusion of thought which grows out of considering a symptom-group to be a disease. The modern scientific physician knows headache is not a disease, but if he finds clinically that a certain headache, characterized by the presence of a certain substance in the urine, is relieved by a certain remedy, he does not hesitate, for practical purposes, to separate that group of headaches from other headaches. Now, melancholia so called is not a disease at all, but, like headache, is a symptom, or a symptom-group, and it is practically important to distinguish groups of cases to be recognized by association of the melancholia with other symptoms relieved and having peculiar relations with remedies. In old times the neurologists spoke of hemiplegia as a disease, and to-day we know that hemiplegia is a symptom which may de-

pend upon a great variety of causes. The pathology of insanity is so utterly recondite and so little understood, that symptom-groups are almost the only thing we can at present recognize. Scarcely two writers upon insanity can be found to acknowledge the existence of the same so-called diseases, much less to define them similarly, or to group them in like manner. The classification of the forms of insanity seems to be utterly hopeless, probably because we know nothing whatsoever of the diseases which afflict the mental functions, and substitute for such diseases the symptom-groups already spoken of. If melancholia, mania, etc., are diseases, we must consider that distinct diseases are based upon the same brain-lesion, for it is well known that in general paralysis of the insane the sufferer may be profoundly melancholic, may be wildly maniacal, or may in contented quiet nurse his delusions of grandeur.

THE LOCAL ANÆSTHETIC ACTION OF BRUCINE AND THEINE.

NO other department of the whole province of pharmacology has been more thoroughly and successfully studied during the last two years than that of local anæsthesia. The discovery of the now famous anæsthetic property of cocaine has furnished the praiseworthy stimulus to the efforts which have been put forward in search of the same property in other therapeutic agents. And the strangest feature of this whole investigation exists in the fact that none of the substances which have been shown to possess the power of local anæsthesia are of recent discovery, but all were believed to have their well-defined places in the works on materia medica, and some of them were known to the profession for hundreds of years.

About a year ago there appeared an article in this journal (see THERAPEUTIC GAZETTE, June 15, 1885) on the "Physiological and Clinical Action of Brucine," by Dr. Thomas J. Mays, of Philadelphia, in which he shows that, physiologically, brucine has a specific affinity for the nerves of sensation, and that it produces local anæsthesia both in animals and man when applied to the surface of the body. It was found that a five or ten per cent. solution of the drug completely relieved the scalding on the lip and tongue produced by Cayenne pepper, as well as the itching produced by croton oil, and the burning caused by a mustard-plaster. It also gave surprising relief to several cases of pronounced chronic pruritus. Its power of relieving perverse itching in any part of the cutaneous surface, especially in pruritus of the anus and vulva, has been confirmed by the clinical experience of the writer in a number of cases of this kind. Dr. Charles H. Burnett, in a paper read before the American Otological Society, July 12, 1885 (Trans. of Amer. Otolog. Soc., 1885), attests the inefficiency of cocaine applications to the ear, but reports excellent results from the application of a five per cent. solution of brucine to the same. He states that "the relief to pain has been prompt and complete, a result far more satisfactory than any obtained by using cocaine solution." He applied it by means of a cotton mop. Dr. Ralph W. Seiss, of Philadelphia, contributes some interesting notes of quite an extended experience with brucine in the THERAPEUTIC GAZETTE for January 15, 1886. He employed it in painful furuncles of the external auditory canal, in suppurative otitis, in sensitive conditions of the auditory canal for the purpose of rendering the use of instruments painless, and of lessening or abolishing the pain and burning caused by applications of iodine, nitrate of silver, sulphate of copper, and the like to the mucous membranes of the throat and nasal passages, and witnessed marked relief in the great majority of instances. Although more permanent in its effects, he does not believe it to be as reliable as cocaine.

Although the action of brucine never obtained much scientific investigation, it was always taken for granted that, like its twin-sister, strychnine, it almost exclusively affected the motor division of the spinal nervous system; yet the experimental and clinical data referred to render it very certain that either a notable difference exists between the action of these two agents, or that all our physiological and clinical knowledge of the action of strychnine rests upon an insecure foundation.

But one of the most remarkable of all the local analgesics which has been brought before the profession is theine, the alkaloid of Chinese tea. Attention was also first drawn to this agent by Dr. Mays in an article on "The Physiological and Therapeutic Action of Caffeine, Theine, and Guaranine," which appeared in the THERAPEUTIC GAZETTE for September 15, 1885. It was here shown, from experiments made on frogs, that theine paralyzes the nerves of sensation; and that this impairment of sensibility proceeds from the centre to the periphery, and not, like that of brucine, from the periphery to the centre.

Subsequent investigations by the same author, which were published in the *Medical News* for December 12, 1885, and April 17, 1886, proved that it exerts the same influence on man. In the two last-mentioned articles the author contributes the clinical results derived from thirty-nine cases of painful affections in which it was employed by himself and by some of his colleagues, and it appears that the verdict is almost unanimous in favor of its usefulness, not only in affording immediate relief to the pain, but also in effecting a cure in many of the cases. The special nature of pain in these cases consisted of neuralgia, chiefly of the sciatic, intercostal, and cervico-brachial variety, lumbago, myalgia, rheumatic pain, etc., in which from one-half to two and a half grains of the alkaloid were introduced subcutaneously at or near the central origin of pain.

Among the extraordinary features in the action of theine is its localized anæsthesia below the seat of injection. There can be no question about its general absorption; but there has occurred no evidence in the author's experience to show that it produces any systemic disturbance, even in maximum doses. Its absorption and distribution by the blood probably play a secondary rôle, for it seems to exert its influence on the trunk of the nerve at the point of its injection, and then to distribute itself downward along its course in spite of these functions. This localized action of theine naturally gives it an immense advantage over morphine, atropine, chloral, and other agents of that class, which principally act by intoxicating the central nervous system.

Theine also appears to be very prompt in its anæsthetic action. The writer has on a number of occasions witnessed patients suffering from the most excruciating neuralgic pains, who were entirely relieved in less than five minutes. It is also very rare to find the pain returning in less than ten or twelve hours, and oftener not until in twenty-four hours, and then very probably not in its original intensity.

Evidence from other sources than those above quoted convinces us that theine has a wide scope of application, and that it bids fair to play a most prominent part in the therapeutic relief of pain. We, therefore, await with much concern further developments in the use of this interesting drug.

Now a few words to those who never weary of asserting the utter worthlessness of experimental therapeutics to practical medicine. It is very clear, of course, that such dogmatism only springs from insufficient scientific training, combined, probably, with a desire of truckling to that popular prejudice which every new science encounters. It is evident, too, that in the end such pedantic efforts will prove to be as harmless as the kick which Sam Weller administered to the fat boy when he undertook to express admiration for the pretty cook: there can be no doubt, however, but that they exert a mischievous influence on the formative period of public opinion on this question at the present time. It is noteworthy, therefore, that in brucine and theine we have two more agents added to our list of remedies, which have been given by experimental to practical medicine. Brucine was isolated in 1819, and, until the appearance of Dr. Mays' article, its action was regarded as being analogous to that of strychnine. So, also, in the case of Chinese tea. The leaf of this plant has formed a domestic drink for many centuries, and its alkaloid theine has been known for nearly threescore years; yet no one suspected that the latter contained an analgesic action more remarkable than that of cocaine until it was discovered by the crucial test of scientific experiment, and that on the frog alone.

THE PREVENTIVE INOCULATION OF YELLOW FEVER.

AS is well known, Dr. Freire claims that he has discovered a means of preventing yellow fever through inoculation by transferring the supposed germ of yellow fever through animals that possess the requisite receptivity.

His inoculations now are said to reach nearly seven thousand, and, according to the testimony of Dr. H. M. Lane, who states that he was able to follow up a large number of the inoculations reported, of these he was unable to find a single well-authenticated case of an inoculated person dying of yellow fever; but he found numerous instances of death from yellow fever among persons not inoculated living in the same yard, sometimes in the same house, with persons who had contracted this disease. Dr. Lane's testimony is of especial interest, as he himself submitted to the preventive inoculation, and he reports the details of the operation and its results in *The Boston Med. and Surg. Journ.*, June 10, 1886. Dr. Lane states that he arrived in Rio on the 16th of March last, during the prevalence of an epidemic of yellow fever. The next morning Dr. Freire

at eleven o'clock injected into his left deltoid 16 minims of his pure culture of the yellow fever germ of the twenty-second attenuation. At 5 P.M. he had a slight chill, followed by a feeling of general discomfort, nausea, frontal headache, pain in legs and lumbar region, the temperature going up with corresponding acceleration of pulse until 2 A.M., when it reached 102.7°. At this time he fell asleep, and slept for two hours, when he awoke perspiring. The pulse and temperature gradually declined until 7 P.M., when they had reached normal. The headache and other symptoms also left him feeling a little weaker than usual, without appetite, with a furred tongue, and skin slightly jaundiced. There was an almost complete suppression of urine for almost twenty-four hours. The restlessness, the hot dry skin, the thirst, nausea, headache, and muscular pain were all characteristic of the first period of yellow fever. During the next week he was constantly exposed to the disease in the affected districts, and came in contact with yellow fever patients without further trouble, while a friend, coming with him from the same place as himself a few weeks before, and passing a single night in Rio, had taken the yellow fever and died.

Of course the escape of a single subject of inoculation from yellow fever is of little value, but taken together with the seven thousand inoculations which also have been claimed in each case to have prevented the disease, the escape is too marked to have been a mere coincidence.

In a report as to the results obtained by Dr. Freire made to the Société de Biologie of Paris at a recent meeting, M. Rebourgeon stated that of 3051 subjects inoculated at Rio not one had died, whereas, in the same districts and houses, 278 non-vaccinated persons had succumbed to this disease. It is even claimed that when the inoculations are practised in the second stage of severe cases of this disease, recovery will almost invariably result. M. Rebourgeon stated that he had frequently inoculated himself with attenuated virus, and was so convinced of its protective power that he had exposed himself without hesitation to the disease, and he even offered to undergo inoculation with the yellow fever itself. He presented a specimen of the attenuated virus to the Society for examination, and a commission consisting of Brown-Séquard, Cornil, Duval, Bourquelot, and Maurel, were appointed to study the method and value of these inoculations.

We believe that there is at present a bill before Congress which has for its object the investigation of the truth or falsity of the claim advanced by Dr. Freire as to his power of preventing yellow fever. If this is so, we can only hope that it will pass, and the subject be disposed of one way or the other.

SULPHATE OF SPARTEINE.

IN the sarothamnus scoparius are two bodies, sparteine and scoparine, which were both discovered in 1851 by Stenhouse. It was not, however, until 1879 that the medicinal properties of one of these alkaloids, sparteine, first attracted attention, although the genus to which these plants belong had long been known to possess diuretic properties.

Of these two substances, sparteine has attracted the most attention. Sparteine ($C_{15}H_{26}N_2$) is an alkaloid, which, in its pure and fresh condition, is an almost colorless, oily fluid, but which, through the action of light and the atmosphere, soon becomes colored brown. It gives all the characteristic alkaloidal reactions, and forms crystallizable salts, which are soluble in water. Of these, the sulphate is most readily soluble, and is the one which is most ordinarily met in the market. Sparteine is heavier than water; boils at 278° C., and has a rather pungent odor, recalling that of pyridine, with a very bitter taste. We have already, in a previous issue, described the methods for its isolation. Sparteine is not the diuretic principle of scoparius, but is an alkaloid which, according to Fick, Laborde, and Germain-Sée, when injected hypodermically in rabbits in doses of about 1 grain, produces increase of the pulse and the respiratory frequence, frequent disturbance of co-ordination and somnolence, and finally death, with convulsions, through paralysis of the spinal cord and inhibitory centres of the heart.

According to the researches of Mitchell and Schroff, sparteine is fatal to rabbits in the dose of 1 drop. Fick was the first to observe the paralysis of the pneumogastric produced by this alkaloid (*Archiv für Experimentale Path.*, Bd. i., p. 397), while he also noticed with it increased diuresis. In 1880, Raymond, in Vulpian's laboratory, made some experiments with sparteine, but he does not appear to have noticed its action on the heart. This action has been principally emphasized by the more recent researches of Laborde and Sée. Laborde (*Tribune Médicale*, November, 1885), from a number of ex-

periments made with the sulphate of sparteine, obtained by the method of Houdé, on rabbits, dogs, and frogs, claimed that sparteine increased the intensity and duration of the cardiac contraction apparently through a central action, and that in frogs, after cessation of respiration, the heart persisted in its rhythmical contractions. Sée has employed sparteine in therapeutics as a substitute for digitalis, and claims that while free from the disagreeable and dangerous after-action of digitalis, it increases the power of both the heart and pulse more strikingly even than digitalis or convallaria. When the heart is disturbed in its action, as in typhoid states and febrile conditions, sparteine is said to raise the vital energy of the entire organism and to regulate the pulsations of the heart. Sée has, however, never noticed any increase of the urinary secretion under its influence, a fact which seems almost inexplicable in the face of the enthusiastic statements which he makes as to its power of increasing the force of the ventricular contraction. According to Sée, sparteine is indicated when the pulse is feeble, irregular, or intermittent, and where, from some other reason, digitalis or the other cardiac stimulants are contraindicated. It may be given in doses of $\frac{1}{10}$ grain. It is claimed to produce no disturbance of digestion or of the nervous system. It is to be hoped that this drug will be subjected to very close investigation to confirm or disprove the claims which have been made for it, and establish its exact position in our materia medica.

HOPEINE.

THE manufacturers of hopeine appear to have themselves not clearly decided as to what the exact composition of hopeine ought to be. We have already called attention in these columns to the fact that hopeine seems principally to be morphine. This has been proved by the examination of a large number of independent observers. We have also referred to the fact that it has been found by Dr. Paul to contain cocaine, and Dr. Paschkis, in the *Pharmaceutische Post*, April 17, 1886, now believes that he has proved that hopeine is a mixture of a substance which is either morphine, or absolutely identical with it, and another base which is soluble in ether, and which is much more powerful than morphine, and which differs from it in its action on the organism. This latter substance, which responds to all the tests for alkaloids in its physiological action and chemical tests, appears to be hyoscine.

AN IMPROVED ELECTRIC BATTERY.

WE have received from The Electro-Medical Battery Company, of Kalamazoo, Michigan, an example of their Improved American Pocket Battery. This is in its construction based upon the French Gæffe, or bisulphate of mercury battery, its chief difference being in a very great improvement of the cell, which is closed, instead of open, as in the original.

The great drawback with these batteries is that they cannot be made to yield slowly interrupted currents, but they are much cleaner, more portable, and more easily managed by the ignorant than are the acid batteries. The workmanship of the American battery, so far as inspection can go, is good. It has well stood what tests we have been able to give it, and certainly affords a powerful current.

Reports on Therapeutic Progress.

ANEURISM OF THE THORACIC AORTA TREATED BY GALVANO-PUNCTURE.

At the meeting of the Clinical Society of London, held May 14, 1886 (*Medical Press*, May 19, 1886), DR. CHURTON read notes of a case of thoracic aneurism treated by galvano-puncture.

A strongly-built man, æt. 45, had in 1880 an aneurism which protruded through the left chest-wall. He was then in the Leeds Infirmary, under the care of Dr. Clifford Allbutt, and was treated by iodide of potassium (afterwards continued for three years), and by galvano-puncture upon two occasions. After each puncture pulsation ceased for two or three days, but finally remained as before. The aneurism, however, did not increase in size until last year. In June, 1885, he was admitted under the care of Dr. Churton, a second tumor having appeared in front of the lower part of the sternum. This grew rapidly. With Dr. Allbutt's concurrence, Mr. Teale, who had operated upon the patient previously, applied the galvanic needles, fifteen cells of Leclanché's battery being used for twenty minutes. Blood-débris ran from the negative puncture. The pulsation ceased, but returned on the fourth day. The operation was repeated on October 2 with like result. He

began about this time to expectorate two or three drachms of blood-stained mucus daily. On October 27 galvano-puncture was used for the third time. The tumor was tympanitic for a few hours, but did not cease to pulsate. On November 9 it was so much increased in size and its walls were so thin that a fourth puncture was made, Dr. Griffith, the resident medical officer, operating in the absence of Mr. Teale. The current was passed for twenty minutes. Pulsation entirely ceased, and the patient seemed to have gained a respite, but suddenly died twenty minutes after the operation from rupture into a bronchus of the first aneurism, which had hitherto given no new sign except the very small quantity of bloody sputum. At the autopsy, an erosion, half an inch in diameter, almost blocked up by a clot described below, was found in the upper division of this sac. Except in the arch, the aorta was only moderately atheromatous. One testis had undergone fibrosis. The orifice of the first aneurism was about an inch in diameter; the wall of the sac was as firm as cartilage. The middle of the sac was occupied by a firm clot larger than a cricket ball; the lower part of the sac was lined by laminated clot, thin around the orifice, gradually becoming thicker above, and quite smooth. The upper aspect of the central clot was rough. A fissure between the wall and the clot connected the two chambers of the primary sac. It seemed that after the deposition of clot upon the entire sac, with closure of the upper part by formation of a very thick layer, the layer had been stripped from the roof of the sac by the blood which found a way through the fissure, and then enlarging this part of the sac formed a projection on the exterior of the chest. A constriction in the sac, marking the position of the large mass of clot, suggested this view. The growth of this sac was arrested by the firmness of its wall except at two points. An orifice a third of an inch in diameter existed at the lower part of the upper division, just outside the chest. This led to a second sac, the walls of which were soft, and its interior irregular, except where the sternum, quite uninjured, formed its limit. The front wall was composed merely of skin, and irregular bands or trabeculæ of connective tissue of varying thickness, disposed like the carneæ columnæ of a right ventricle. This was the cavity in which the galvanic needles had been inserted. It contained no laminated clot; the surface was smooth and uninflamed. A soft jelly of pinkish color, too fragile to be preserved, and some blood-débris were contained in the cavity. The cessation of pulsation had been due to entanglement of this clot in the short, narrow canal leading from the orifice into the cavity. The temporary cessation of pulsation noted in the large aneurism five years ago was probably due to a similar entanglement of soft clot in the narrow fissure above mentioned. The formation of such a clot and of blood-débris in the cavity of a perfectly open aneurism, one would suppose to be not free from danger.

ASEPTOL.

Orthoxyphenylsulphurous acid is the somewhat cumbrous name for a compound destined for popular use, and this fact may to some extent excuse the adoption of the more suggestive title of "aseptol" for an article that was to be put into the market as an antiseptic. Both these names are, however, now to be displaced in favor of "sozolic acid" (from *σωξω*, I preserve), M. SERRANT being anxious to avoid an erroneous inference from the termination in "ol" that the compound is of a phenol character, and to indicate that it has the properties of a definite and well-characterized acid (*Comptes Rendus*, May 10, p. 1079).

Sozolic acid, in fact, besides being soluble in water in all proportions, is described as combining perfectly with bases to form salts, and it is to its capability of saturating ammoniacal bases that its antiseptic action is attributed. The difference in chemical action between carbolic acid and sozolic acid is seen in the fact that red litmus-paper placed in a flask containing ammonia gas, after the introduction of sufficient carbolic acid to mask the odor of the ammonia, is turned blue, while, if sozolic acid be used, the red litmus does not change color. M. Serrant also points out that sozolic acid is an "ortho" compound, and that the antiseptic properties of compounds in the aromatic series, which includes the best antiseptics, seem to depend upon their capability of forming an anhydride that is only yielded by the "ortho" compounds; for instance, orthobenzoic acid, or salicylic acid, is antiseptic, while paraoxybenzoic acid is not. M. Serrant claims that sozolic acid exceeds salicylic acid in antiseptic power. This he accounts for by comparing the formula of sozolic acid ($C_6H_4OH.SO_2OH$), which contains the sulphuryl radical, with that of salicylic acid (CHOH.COOH), where its place is taken by the carbonyl radical. The superiority of sozolic acid over competing anti-

septics in other respects is also claimed, to an extent, indeed, that is rather unusual in a paper read before the Academy of Sciences. —*The Pharm. Journal and Trans.*, May 29, 1886.

A NOVEL PROCEDURE FOR THE REMOVAL OF SUBGLOTTIC LARYNGEAL GROWTHS.

At a recent meeting of the American Laryngological Association, Dr. William Jarvis read a description of a novel procedure for the removal of subglottic laryngeal growths (*Med. News*, June 12, 1886).

J. C., aged 35 years, consulted him on March 22, 1882, for the relief of a difficulty of speech and of breathing. The trouble with the voice was noticed two years before, the difficulty in speech appeared one year before coming under observation. The laryngoscope showed a mass of papillomatous tissue occupying the cavity of the larynx. The vocal cords and ventricular bands were not involved. An attempt was made to seize the growth during phonation, with the Mackenzie forceps, but only a few pieces were removed. The écraseur was then tried, but it was found impossible to use this instrument on account of the wire being seized by the spasmodic contraction of the vocal bands and displaced. Chromic acid applications were then tried, but although the growth was touched, it was found impossible to limit the application to the diseased structures. The patient then disappeared, and did not return for a year. His condition was then much worse, and the difficulty of breathing greatly increased.

Dr. Jarvis then determined to try the following plan, and, if this failed, to remove the growth through an opening in the windpipe. A forceps, similar to the Mackenzie instrument, but heavier, was secured. Through the tips of the blades holes were drilled, and through these was passed a piece of No. oo piano-wire, which was conducted through a second opening at the angle of the blades and out to the handles, where it terminated in a loop, into which the extremity of the index-finger could be placed. When the blades were separated, this wire formed a cross-bar, uniting their extremities. When the blades were closed, the loop of wire could be drawn up by the finger. The operation was performed without an anæsthetic. The tongue was depressed, and, with the aid of the mirror, the forceps was introduced into the cavity of the larynx. The mirror was then removed, and the forceps carried down to the glottis, through which the tip of the instrument was forced with considerable trouble, on account of the spasm. The instrument was carried into the trachea sufficiently far to be sure that it was below the attachment of the growth. The blades were then separated, and pressing against the anterior wall of the larynx, the instrument was gradually raised until the wire was caught. The blades were then closed and clamped, the loop of wire drawn in, and the forceps removed, bringing with it a growth. The laryngoscope showed a second growth, which was removed in the same way. Breathing was at once rendered easy, and the speech became natural. The patient said that the presence of the forceps, although uncomfortable, caused no pain. This is the only case on record of the removal of a subglottic tumor without anæsthesia and without an opening into the larynx.

THE TREATMENT OF STRICTURE OF THE URETHRA BY ELECTROLYSIS.

At a recent meeting of the Royal Medical and Chirurgical Society a paper on this subject was read by W. E. Steavenson, M.D., M.R.C.P., and W. Bruce Clarke, M.A., F.R.C.S. (*Brit. Med. Journ.*, May 29, 1886). The more extensive use made of electrolysis in surgery and gynæcology abroad, and especially its successful employment in the treatment of stricture of the urethra, had induced the authors to undertake a series of observations to test the accuracy of the reports which had reached England. Their results bore out in every particular the results of success they had received from America. Electricity, on account of its power of splitting up compounds into their chemical elements, could be used as a substitute for ordinary caustics to the human body. It could be used with especial advantage to parts difficult of access, such as the male urethra and the uterine cervical canal, and it could also be applied to these and other regions where the application of other caustics was attended with a certain amount of danger. Its effects could be limited to the points touched by the electrode. The caustic effect could be arrested, or not commenced until the applicator, in the form of the electrode, was *in situ;* and the duration and extent of the caustic action were entirely under the control of the will of the operator. The treatment of stricture of the urethra by this method was the most simple, and, per-

haps, the most striking in its results, and had, therefore, been selected as the first on which to collect and report observations. In this paper, the details were given of six cases of stricture of the urethra treated by electrolysis, the *modus operandi* was explained, the steps of the operation were given, and the advantages of this method of procedure were summed up. There was usually no bleeding. If hemorrhage did occur, it was accidental, and usually showed that too strong a current had been used; no anæsthetic was required. If pain or discomfort were produced, it was trifling. The patient could, in the case of slight strictures, pursue his ordinary occupation during the period of treatment. No antiseptics were required, as the process itself was aseptic. In the majority of cases, there was no contraction or return of the stricture. Eschars produced by caustic alkalies were said to heal with less contraction than wounds produced in any other way, and electrolysis with the negative pole of a battery was a means of applying the same destructive action as was caused by the caustic alkalies to parts difficult of access in a way which was impossible by any other method. Probably, other chemical decompositions and combinations took place at the negative pole besides those characteristic of the caustic alkalies, but they had not, up to the present time, been thoroughly made out.

Mr. Berkeley Hill was much interested by the paper, but was sorry to say that he could not find the conclusions of the authors quite satisfactory. The cases had been related, after the manner of the American writers on the subject, without enough detail as to the size, nature, and position of the stricture. One case had suffered from stricture, more or less, for twenty years; he had often been relieved for a time by ordinary dilatation, and then had slowly relapsed. The relief given by Dr. Steavenson and Mr. Bruce Clarke dated only from about eight months ago, and he expected that his discomforts would return; at any rate, at present, there was no proof of a cure. It was universally admitted that, by patient pressure, a larger catheter could be passed; but he thought the authors had hardly made due allowance for this in their account of the increased size of the electrical bougies passed, which might perhaps be due to patience as much as electricity. He had himself carefully considered the American cases that Dr. Newman had published, and had followed his plan in treating one case of his own. There was stricture, two inches and a half from the meatus, probably behind an old urethral abscess; he could see clearly with an endoscope, which he was sorry the authors had not used. He passed a needle, which formed one pole of the electric circuit, into the scar-tissue, and could see, with the endoscope, that nothing more happened than the occasional liberation of a bubble. The patient felt no pain at all, except on making and breaking the current; he measured the current's strength by the patient's feelings. After fifteen minutes' application of the current, he found the stricture enlarged from 19 to 20 of the French scale. After further treatment, in the same manner, it gradually contracted from 20 to 16; and as cure seemed very unlikely by such a process, he resorted to other methods, and found no difficulty in widening it.

Mr. F. Swinford Edwards had treated a case, with the help of Dr. Steavenson. He had first seen the patient two and a half years ago, when he found three strictures, two penile and one subpubic, of size No. 12 (French); these he gradually dilated to No. 25. For two years the patient was lost sight of, and then returned with three strictures, distant ½ inch, 4 inches, and 5½ inches from the meatus, admitting only No. 4 (French). Dr. Steavenson applied a No. 3 electrode and current of from 5 to 8 milliamperes; this did not pass; but the flow of urine was improved, and, a few days later, a bougie, No. 10, could be passed; and, after a few weeks under electrical treatment, a bougie, No. 26 steel or No. 28 pewter, could be admitted. Whether it was to be called strictly a cure or not, it was certainly satisfactory in enabling the patient to get about and do his work; and his case was a bad one, which would otherwise have needed treatment with an Otis's dilating urethrotome. He hoped the treatment would be further investigated in hospital cases.

Mr. G. Buckston Browne thoroughly agreed that it would be a very good thing if the practised hands of the seniors in the profession could be brought to try this method; for there was hardly any point in which more experience was needed than in estimating and accurately diagnosing stricture. He was inclined himself to attribute the results embodied in the paper to the dilatation, not to the electricity; else why was it found advisable to use gradually larger and larger electrodes? Even pressure, without passage of a catheter, often did much to facilitate the passage of urine. He had considered Dr. Newman's cases with some care, and could

not help calling attention to one remarkable point in them, that they were, every one of them, successful.

Dr. Steavenson observed that very little of the reply fell to his share. He was not familiar with the endoscope which Mr. Berkeley Hill had shown. In Mr. Hill's cases, he understood there had been puncture, and he certainly was not surprised that contraction had followed. They had used bougies, of gradually-increasing size, to keep in contact with the walls of the urethra.

Mr. Bruce Clarke said he had been quite prepared to meet the two chief objections that had been urged: that the cases were not really of organic stricture; and that they were not really cured. As to cure, he was bound to admit that the operations had been performed last August, and not treated since; they were under observation, and had not relapsed; only time could prove their ultimate cure. As to the point that they were spasmodic strictures, he could not admit it; in one of the cases, there had been extravasation of urine; at first, nothing could be introduced, but, after electrical treatment, he could pass No. 11 (English), and that was a success as great as any after a cutting operation.

The editors of the *British Medical Journal* for the same date comment on this mode of treatment as follows:

"The treatment of urethral stricture by electrolysis is one of which there is, as yet, very little practical knowledge in England; and we confess we were very glad to see it so well brought forward as it was last Tuesday evening by Dr. W. E. Steavenson and Mr. Bruce Clarke, at the Royal Medical and Chirurgical Society. Interest in the subject was first aroused by one of the daring attempts of American surgery, made by Dr. R. Newman, of New York, who published, about eighteen months ago, 'Tabular Statistics of One Hundred Cases of Urethral Strictures treated by Electrolysis, without Relapse.' It would have appealed, perhaps, even more strongly to those who believe in the fallibility of human nature, if there had been one or two relapses. The fashion of operating admits of many small variations; but the essential points are, that one pole of the battery shall be of metal, and in contact with the surface of the stricture, and the other widely spread out by means of a pad over a considerable surface of the body, the back, or elsewhere; and that between these poles a current of considerable strength should be passed. It is found most successful and least uncomfortable that the negative pole should be in contact with the urethra; the positive, with the body. A current may be passed which is strong enough to act upon the stricture without giving any discomfort, except, perhaps, at the moments of making and breaking. What the exact action of the current upon the cicatricial tissue may be we are hardly in a position to say, though the actual watching of the process by means of an endoscope, as practised once by Mr. Berkeley Hill, may throw more light upon it. It is covered, at present, by the word 'electrolysis,' of which, when applied to fibrous tissues, we must admit that the limits are somewhat indistinct. At any rate, it is alleged that not only does the resistance of the stricture give way, but that more or less of the tissue which forms it is turned into a slimy mass of broken-down epithelium, and so disappears, without leaving a contracting cicatrix. The *à priori* impression is certainly strong that, where tissue has disappeared, there must be a cicatrix; and that, if there is a cicatrix, it must contract, sooner or later. Those who have practised electrolysis will gain a much more attentive hearing and a more zealous following when they can show a longer maintenance of good results than the eight months which have elapsed since Mr. Bruce Clarke's operations. When the malady is chronic, it naturally needs a long time to judge of the cure; but, at the same time, the habits of scars, due to different causes, are known to vary greatly in contraction, and it is possible enough that there may be less contraction after electrical action than any other, even than those from caustic alkalies. And, further, we are not yet experienced enough to assert how completely similar or dissimilar to an ordinary cicatrix this process of electrolysis may be. That it deserves trial from the older and most skilled hands there would seem to us little doubt; and we can imagine it most convenient that the electrical necessaries should be managed by the younger students of that somewhat difficult class of instruments."

SALOL.

"Salol" is the name of a new compound prepared by Professor Nencky, which is said to possess powerful antipyretic and antiseptic properties, and to be capable of replacing advantageously sodium salicylate in cases where that salt is badly tolerated. Salol is a derivative of salicylic acid, in which one atom of hydrogen is replaced by the phenol group. It is described as a white powder,

having a faintly aromatic odor, and as it is almost insoluble in water, perfectly tasteless. Professor Nencky states that in the organism salol undergoes a simple splitting up into its two components, without any further modification, both being found in the urine. The decomposition appears to be affected by the pancreas, since the powder brought into contact with comminuted pancreas is at once decomposed. Assuming, therefore, that the decomposition first takes place in the duodenum and not in the stomach, Professor Nencky thus explains how it is that its administration is not followed by disagreeable after-effects. The dose is about the same as that of salicylate of sodium, but as much as 4 grammes (60 grains) may be given daily. The urine, after its administration, becomes very dark, almost black, as after the ingestion of carbolic acid, of which salol contains thirty-eight per cent. No toxic symptoms, however, are produced, probably because the phenol passes through the stomach in combination and is not absorbed. The antiseptic properties of salol are also said to render it useful in the treatment of putrid affections of the mucous membrane.—*Pharm. Journ. and Trans.*, May 29, 1886.

THE VALUE OF LANOLIN.

Lanolin appears to be more and more attracting the attention of physicians as a means of applying various substances in the form of ointments to the skin and insuring their absorption. That it is absorbed more readily than either lard or vaseline has been claimed for it, and this has been proved to be a fact by some experiments made under the supervision of Dr. H. W. Blanc at the Skin and Cancer Hospital, New York, and reported in the *Journal of Cutaneous and Venereal Diseases* (June, 1886) by Dr. George Henry Fox. The method employed in these experiments was to mark off on the anterior surface of the forearms of a young girl spaces four by six inches in extent. Upon the space so marked on the right forearm 15 grains of lard were rubbed for fifteen minutes. The left forearm was treated with lanolin in the same manner. The lard was softened more quickly by the heat of the skin and hair, and was spread much more rapidly over the surface.

With as nearly an equal amount of pressure as it was possible to give, the lanolin was found to redden the skin more readily than the lard. At the expiration of the fifteen minutes, the greasy matter remaining upon each forearm was carefully collected by means of a spatula and weighed, with the following result:

Weight of lanolin used				15 grains.
"	"	"	removed from skin	5 "
"	"	"	absorbed	10 "
Weight of lard used				15 grains.
"	"	"	removed from skin	10 "
"	"	"	absorbed	5 "

We see, therefore, that while two-thirds of the lanolin disappeared during the rubbing, only one-third of the lard was lost.

To test the comparative rapidity of absorption of lard and vaseline, similar spaces were marked off upon the back of a young man upon either side of the spine and beneath the scapulæ. Fifteen grains of each were rubbed in for fifteen minutes, and the amount scraped off was weighed as before, and with the following result:

Weight of lard used				15 grains.
"	"	"	removed from skin	8¼ "
"	"	"	absorbed	6¾ "
Weight of vaseline used				15 grains.
"	"	"	removed from skin	9½ "
"	"	"	absorbed	5½ "

We note in this experiment that the lard was more readily absorbed than the vaseline, although the difference was not as marked as in the case in which the lard and lanolin were tested.

As a proof of the rapid absorption of drugs by means of lanolin frictions, Liebreich states that a solution of bichloride of mercury in lanolin, of a strength of 1 to 1000, will produce a metallic taste in the mouth, after being rubbed into the skin. Dr. Fox has rubbed repeatedly upon his own skin, as well as upon others, a lanolin ointment of ten times this strength, and failed to get any gustatory proof of its absorption. In some subjects of his experimentation, however, the pecular metallic taste in the mouth has been noted, but it is possible that a similar effect might have followed the use of lard or even vaseline. As an improvement in our present method of endermic medication, particularly in the inunction cure of syphilis, lanolin may prove to be of great value, but time will be required to settle this point.

Without discussing further the theoretical use of lanolin, let us consider the question as to its practical value when tested in the treatment of skin-diseases. Since the first importa-

tion of lanolin from Germany, Dr. Fox states that he has been using it in nearly all cases in which he had occasion to prescribe an ointment, and he failed to see any remarkably beneficial effects from its use. On the contrary, it has proved objectionable in some instances on account of its color and consistence, and, in certain cases of acute inflammatory disease of the skin, it has not been found to be as bland as one has been led to expect. When he used a lanolin ointment upon one side of the body, and a lard or vaseline ointment upon the opposite side, the patient has usually expressed a preference for the latter, and in no case has the rapid absorption of the former been so marked as to attract notice.

In conclusion, his views respecting lanolin may be summed up in the following statements:

1. Lanolin is more readily absorbed by the skin than any other fatty substance.

2. As a basis for ointments, it is useful when an effect upon the deeper skin or upon the whole system is desired.

3. On account of its firm consistency, it is advisable to mix with it a certain amount of lard, especially in cold weather.

4. When applied to a highly-inflamed skin, lanolin may not prove as bland as *fresh* lard or *pure* vaseline.

5. Considering its recent introduction, its questionable superiority, and its present cost, it cannot be recommended as yet as the best basis for all ointments.

THE TREATMENT OF ERYSIPELAS WITH CREASOTE.

Dr. H. J. Fox, writing in the *St. Louis Medical Journ.*, May, 1886, claims that creasote may be regarded almost as a specific in the treatment of erysipelas. His manner of application is to keep the parts constantly covered with cloths wet with a solution of 6 to 20 drops to the ounce of water. In ulcers or wounds it may be used in the form of a poultice by stirring ground elm into the solution. The strength to be regulated according to the virulence of the attack. Ordinarily, 10 drops to the ounce is strong enough for the cutaneous form of the disease, and in dressings for wounds or recent injuries. If the inflammation threatens to spread rapidly, it should be increased to 20 or more drops to the ounce of water.

The antiseptic properties of this remedy render it of additional value, as it will certainly destroy the tendency to unhealthy suppuration, and thus prevent septicæmia.

In the treatment of hundreds of cases of erysipelas, according to Dr. Fox, but a single fatal case has occurred, and that one in an old and depraved system. In the less violent attacks no other remedy was used, but where constitutional treatment was indicated, the usual appropriate tonics were prescribed.

PARALDEHYDE AS AN ANTIDOTE TO STRYCHNINE.

The property of paraldehyde of greatly reducing the activity of the spinal cord as a reflex centre, led Prof. Bokai (*Pharm. Post*, April 24, 1886) to test paraldehyde as an antidote to strychnine-poisoning. The results of his experiments made on rabbits, cats, and dogs were almost invariably favorable. The animals first received a non-fatal dose of paraldehyde, and then an absolutely lethal dose of strychnine was given. In no case did the strychnine produce death. If, however, doses of paraldehyde, which are themselves fatal, were given to animals, the largest doses of strychnine were not able to remove the poisonous symptoms of the paraldehyde or to delay the fatal processes. It would appear, therefore, that the antagonism between these two drugs is only one-sided. Since the hypnotic action of paraldehyde is much more rapidly produced than the poisonous symptoms of strychnine, the hope is not unreasonable that paraldehyde, if given soon after the ingestion of a poisonous dose of strychnine, might serve to antagonize it. Prof. Bokai, strange as it may seem, does not appear to have made any experiments in this connection. Should paraldehyde be proved to be an antagonist of strychnine, its use for this purpose is almost without risk, since it is free from the unfavorable action on the heart possessed by chloroform and chloral, which also have some antagonistic power to strychnine.

A NEW METHOD OF MEASURING THE TEMPERATURE IN CHILDREN.

All physicians know how difficult it is in certain cases to take the axillary or rectal temperature in children. One of the principal difficulties is in the restlessness of the child, which prevents it from keeping quiet long enough to obtain a record of the temperature. Dr. Filatoff (*Revue Mensuelle des Malad. l'Enfants*, May, 1886) proposes a

method which, while it is true fails in giving an absolutely exact temperature, serves, at least, to give an estimate which is sufficient in the majority of cases. This method consists simply in observing not the ascent of the column of mercury, but, on the contrary, its fall. He first causes the mercurial column to rise considerably above the estimated temperature by rubbing the bulb with the hand, or in any way warming it. When the temperature reaches 107° F. he rapidly passes the instrument into the axillary space, previously laid bare, and notes the distance which the column falls in one or two minutes. He thus obtains a temperature which almost exactly approaches the true temperature of the patient.

CLIMACTERIC DIABETES.

Mr. Lawson Tait calls attention in the *Practitioner* (June, 1886) to the fact that in a large majority of cases of eczema of the vulva at the climacteric period the disease will be due to the presence of sugar in the urine. He states that he has not yet come across a case of this kind in which he has failed to find sugar. The disease seems to begin at or near the arrest of the menstrual function, and to extend over a period of several years, then terminating in all probability by nature's own process. The sufferings of the patient are, according to Mr. Tait, much diminished and the duration of the disease probably shortened by the free administration of opium. The eczema and pruritus are to be relieved by ointments containing such substances as will arrest fermentation in sugar. Of these, he believes that the old-fashioned hepar sulphuris is the best. He also has used a lotion of hyposulphite of sodium 1 oz. to a quart of water with immense advantage, but it is only by frequent ablutions and syringing that comfort can be so obtained. Opium he uses in 1 gr. dose three times a day and 3 grs. at bedtime; this quantity may be gradually diminished as the patient improves. The chronic vaginitis, which will frequently be found to complicate such cases, may be cured by swabbing out the vagina two or three times with strong carbolic acid, together with an application of oleate of zinc.

NERVE-STRETCHING FOR LEPROSY.

At a recent meeting of the Harveian Society, Dr. E. Downes read a paper on Nerve-stretching for Leprosy, founded on a large experience in nerve-stretching for leprosy and sciatica in Kashmir (*Lancet*, June 5, 1886). Of forty-two cases recorded, thirty-two were well-marked cases of leprosy, and in all these anæsthesia of the lower extremities was an early and well-marked symptom. It was sometimes absolute and sometimes partial, being occasionally accompanied by absence of pigment or by tubercles, the latter occurring more commonly on the face, and often with severe neuralgia of the deeper parts. Ulceration commonly occurred in course of time, and especially in the feet, possibly beginning in some cases as a result of direct injury to the anæsthetic tissues, and often extending to complete destruction of the parts. Some of the cases recorded had lasted from one to seven years, and longer in two instances. The operation was done through a three-inch incision at the back of the thigh, the finger being hooked round the nerve, and the limb lifted from the table. All the cases were benefited by the operation, and in some the ulcers healed completely, and sensation was nearly restored to its normal state; the latter generally took place in the first few days. This success was fully appreciated by the patients, who repeatedly sent their friends suffering from leprosy to be similarly operated upon. The author observed that an exclusive diet of dried fish was not always an element in the production of the disease, many of his cases coming from districts where none was obtainable. He believed the ulceration to be due to peripheral neuritis, consequent upon some altered condition of the blood, for which the presence of bacilli might be answerable.

Dr. Buzzard observed that these cases afforded direct proof of the relation of leprosy to affections of the peripheral nerves, and not to those of the spinal cord. The neuralgia and the immediate results of stretching were strong evidence in this direction. Although few English medical men had to deal with leprosy, he thought that a practical knowledge of the disease would lead to more thorough investigation of other forms of degeneration of nervous origin. Leprosy was at one time endemic in England, and he suggested that remnants and traces of it might still be existent in the form of localized atrophy or leukoderma.

Dr. Downes, in reply to questions, stated that in one of his cases sensation had continued good for two years; none others had been under observation for so long a period. He had obtained uniformly good results in nerve-stretching for neuralgia and sciatica.

SUCCESSFUL EXTIRPATION OF THE SPLEEN.

La Gazzetta degli Ospitali (May 23) reports a case from the surgical clinique of the University of Genoa in which PROFESSOR A. CECI removed a greatly enlarged spleen. The patient, an imperfectly developed and very thin girl, aged 17, weighing 40 kilogrammes, and 1.40 metre in height, with very small pulse, had had an abdominal tumor from birth. The transverse diameter of the tumor was 34 centim., the vertical 23 centim., and the circumference about 64 centim. The anterior surface was smooth and convex, the margins sharp and fissured. The posterior surface presented a large lobe on the left. The abdominal walls were very flaccid, so that the tumor could be completely rotated vertically and transversely, and also be pushed into the left hypochondrium, whence, however, the respiratory movements soon caused it to advance to the front of the abdomen. The liver was in normal position. The enormous size of the floating spleen interfered with the patient's movement and nutrition, and was an occasional source of very severe attacks of pain, radiating from the left hypochondrium to the præcordial region and the left upper limb, and attended with violent dyspnœa and insensibility. Extirpation having been resolved upon, it was performed on March 20, with strict antiseptic precautions. The incision in the linea alba from above downwards through the umbilicus was 23 centim. (9¼ inches) in length. On opening the abdomen, serious signs of suffocation compelled the suspension of the operation for nearly thirty minutes. Anæsthesia having been commenced with bichloride of methylene, chloroform was substituted for it. A triple catgut and carbolized silk ligature having been applied to the pedicle, it was dropped in. The peritoneum was sutured separately. The abdominal walls were brought together by three metallic points, after Billroth's method. The splenic artery was larger than the subclavian. The whole operation, including the interruption, lasted an hour and a quarter. Violent delirium and nervous phenomena simulating angina pectoris soon followed. For two days the pulse could not be counted, and the respiration varied from 70 to 80 per minute. The treatment was by oxygen and nutritive clysters. The wound was first dressed on the eighth day, and almost the whole of the wound-tract suppurated. In spite of strict antiseptic treatment erysipelas supervened, and yet the patient recovered. On April 22 (thirty-one days after the operation) her condition was reported as excellent, only a small superficial wound remaining. The extirpated spleen, with the contained blood, weighed 2400 grammes, equal to 37,036.8 grains, or 77.16 ounces. A courteous note just received from Professor Ceci states the patient is in good health; pulse 80; respiration 22; weight increasing rapidly; complexion florid.—*Lancet*, June 5, 1886.

ON THE TREATMENT OF NÆVUS BY EXCISION: CLINICAL ANALYSIS OF 564 CASES OF NÆVUS.

At a recent meeting of the Clinical Society of London, MR. R. W. PARKER (*Brit. Med. Journ.*, June 5, 1886) read notes of a case of suppurating nævus situated on the back of a child, aged 10 months. It was of the mixed variety,—that is, partly cutaneous and partly subcutaneous. When first seen, it measured 2½ by 2¼ inches, and was considerably raised above the surface. The central (cutaneous) portion was bright red in color; the subcutaneous (raised) portion extended several inches around this central portion. It was stated that it had rapidly increased in size within the last few weeks. The nævus was excised through an elliptical incision, the edges of which were subsequently brought together with catgut sutures, and then coated with iodoform collodion. The child made a rapid recovery, and left the hospital within three weeks. After removal, the nævus was cut into, and found to contain about one ounce of blood-stained pus. The interior of the sac was rough and corrugated, and divided into numerous loculi by strands of shreddy tissue running across the cavity. This case was selected as being unusual on account of the suppuration within the sac; and because, on account of the size and of the largely subcutaneous nature of the nævus, it well illustrated the adaptability of excision as a means of treatment for this (mixed) variety of nævus. Mr. Parker divided nævi into three chief classes,—the cutaneous, the subcutaneous, and the mixed variety, the last-mentioned being by far the most numerous. For cutaneous nævi, one of the simplest and most efficacious methods of treatment was the application of fuming nitric acid; for the subcutaneous variety, he advocated electrolysis or excision; for the mixed variety, excision was regarded as the surest and most speedy, as well as the most radical method. The paper

concluded with an analysis of 564 cases, and a description of the histological characters of nævus, microscopic specimens of which were exhibited.

MR. GOLDING-BIRD had found good results from the "barbarous practice" of ligature. He took exception to the sweeping statement that excision should be applied to all cases. Treatment must depend on the situation and characteristics of the tumor. Ligature was much preferable in cases which occurred in out-patient practice. A less scar ensued after ligature than after excision, and this latter method was inapplicable to nævi of the scalp. In nævi below the lower eyelid, and at the end of the nose, the galvanic cautery alone could be employed, and neither ligature nor excision could be, in this situation, adopted. Properly employed, the cautery left a minimum of scar, and the least amount of contraction. The vascular tissue was gradually supplanted by cicatricial tissue, the contraction of which cured the rest of the vascular tissue. In all such treatment, the cautery should invariably be applied circumferentially at first; then this outer part, cicatrizing, nearly strangulated the central portion, which might be easily dealt with, at another sitting, by cautery, ligature or excision. Mr. Golding-Bird had lately employed this practice very often.

DR. WARD COUSINS asked if it was not possible that the specimen exhibited by Mr. Parker was undergoing spontaneous cure. The knife was the best treatment in some cases, but in others the worst. Some nævi disappeared under any treatment whatever. Nævi affecting the lids and nose, etc., ought to be very slowly treated; he himself treated them piecemeal, by frequent and long-continued scarification, by a double-edged cataract-knife. He approved of the large use of the actual cautery, as for small nævi of the face, and now never employed nitric acid, and never used the ligature under any circumstances whatever.

MR. PARKER had formerly much experience in the use of the actual cautery. For nævi about the nose and eyelid, he employed electrolytic needles, passed from the interior of the mouth or nostrils, where practicable, so as to avoid scars. He advocated excision, as being a radical cure, and because the after-treatment was simple, especially when the edges could be brought well together; any ordinary mother could, after three or four days, attend to the dressing of the wound. The child whose case he had related had probably had some injury to the nævus, in consequence of which it was suppurating.

CALOMEL AS A DIURETIC.

JENDRAFSIK, of Buda-Pest, noticed the diuretic action of calomel in a patient suffering from dropsy, who, for other reasons, was under mercurial treatment by friction, and by the internal administration of calomel in small doses. The treatment with calomel lasted for several days, when an abundant diuresis set in, and the dropsy disappeared. Since then Dr. Jendrafsik has repeated his experience in a large number of cases, always with success (*Gaz. Méd. de Paris*, May 29, 1886). Calomel was administered in doses of 2 decigrammes (3 grs.) three or four times in the twenty-four hours. Larger doses caused diarrhœa, while gargles of potassium chloride served to prevent salivation. The diuretic action appears on the second day with such intensity that the patients are scarcely able to retain their urine; the polyuria may last from five to fourteen days. He thinks that the calomel acts by an osmotic action, the liquid transuded from the vessels being absorbed by the production of an inverse current.

MANACA IN RHEUMATISM.

DR. J. BERGER (*St. Louis Med. Journ.*, May, 1886) adds his testimony to the evidence which is being rapidly accumulated as to the value of manaca in rheumatism. He writes that he commenced the use of manaca in rheumatism about five years ago, and claims that it has given better results than any other single remedy than he has ever employed, and is perhaps better than any combination of remedies. He has used it in all forms of chronic rheumatism with good results, and he has employed it so often in such cases that he has no doubt as to its possessing anti-rheumatic properties to a great degree. He believes that it acts by eliminating lactic and uric acids from the system and, by assisting digestion and assimilation, prevents their reforming in excess. He reports three cases in which its use proved of service.

THE FREQUENCY OF DISEASE OF THE UTERINE APPENDAGES.

From a paper on the above subject published in the *American Journal of Obstetrics* for June, 1886, DR. HENRY C. COE draws the following conclusions:

1. Ovarian disease is *not* as common as it has been represented, the surgeons and *not* the pathologists being responsible for the prevalence of the contrary opinion.

2. Because an ovary is partially diseased it does not follow either that its functions have been materially impaired or that its removal is imperative.

3. The expressions "cirrhosis" and "cystic degeneration," commonly applied to the ovary, are mischievous terms, which are too often used in justification of *unjustifiable* operations.

4. Actual disease of the tubes is far less frequent than is generally believed. Lesser degrees of inflammation, especially slight "catarrhal salpingitis," are seldom appreciable to the pathologist, still less to the surgeon.

5. Many of the symptoms ascribed to disease of the uterine appendages are really due to *localized peritonitis*, and will *not* be removed by a removal of the appendages.

6. The physiology of the ovaries and tubes is still imperfectly understood; their pathology must then remain *sub judice*, and operations for their removal, on the ground of limited disease alone, must be regarded as largely empirical. To which he adds the prediction:

7. The present enthusiasm in this country in favor of Tait's operation will not endure, because it will eventually be discovered that the number of *permanent* cures is entirely out of proportion to the number of operations.

THE TREATMENT OF CONSTIPATION BY MASSAGE.

In the introductory lecture to the course of Pharmacology and Therapeutics delivered at the Westminster Hospital Medical School, Dr. Murrell referred at some length to the good results recently obtained in the treatment of habitual constipation by means of massage. The method he employs is a modification of that originally introduced by Mezger and Von Mosengal. *Pétrissage* of the abdomen is of essential value, the manipulations being performed in the direction of the ascending transverse and descending colon. It is usually associated with various forms of *tapotement*, for the production of which the open hand, the partly-closed hand, or its radial or ulnar border, may be employed. Vibratory movements are resorted to in obstinate cases, and it was stated that the action was usually remarkably prompt and certain. The best results were obtained in cases of constipation associated with obesity, especially when the patient was unable to take much exercise. It probably acts in three ways,—(1) by increasing the intestinal and other secretions; (2) by stimulating the peristaltic action of the intestines; and (3) mechanically, by pressing the accumulated fæces towards the rectum. The treatment is well known on the continent, and will, doubtless, in time be generally recognized in this country.—*Medical Press*, May 19, 1886.

SUGAR AND CORROSIVE SUBLIMATE AS A FIRST DRESSING IN WAR.

Dr. Heidenreich, in a paper published in the *Vrach* (Nos. 19 and 20), strongly recommends as a first dressing on the field of battle a mixture of corrosive sublimate with powdered sugar, in the proportion of 1 to 1000. It is important that when this is prepared the sublimate should be evenly distributed, and this is easily effected by first dissolving the mercurial salt in a little spirit, and then carefully rubbing up the sugar with it. The spirit ultimately evaporates, and leaves a powdered mass of uniform composition. A little packet is supplied to each soldier, containing a capsule, in which is 5 grammes of the mixed powder,—*i.e.*, $\frac{1}{200}$ of a gramme of sublimate,—for the purpose of sprinkling on the wound; also a good-sized piece of gauze impregnated with one-third per cent. of its own weight of sublimate by means of Bergmann's process, which consists of dipping it in a solution containing 10 parts sublimate to 500 glycerin, 1000 alcohol, and 1500 water. Some hygroscopic wadding is also supplied, and this, when inclosed between two folds of the gauze, forms a dressing measuring 650 sq. centim., which is large enough to cover a somewhat extensive wound. The whole is inclosed by means of a layer of varnished paper and a triangular bandage, which is fastened with two safety-pins. The author claims for this mixture of sugar and sublimate the advantage of being a particularly powerful antiseptic, and quite innocuous. Sugar, he says, is the best substance for diluting the sublimate, being itself somewhat antiseptic. This dressing has also the additional advantage of being suitable for use wherever water may be procurable. This, of course, is not always the case, and, where it is the source, is frequently in a marsh or pool of anything but hygienic appearance. Under these circumstances he advises that filtration should be resorted to, and consequently proposes that a kind of filter, consisting of flan-

nel impregnated with sublimate, should be included in the packets supplied to the men. The whole contents of the packet weigh only seventy-five grammes, and are exceedingly portable and inexpensive.—*Lancet*, June 12, 1886.

DIAGNOSIS OF GONORRHŒA IN THE FEMALE.

If there is any clinical truth in the statement put forward at a meeting of the Paris Obstetrical and Gynæcological Society by DR. MARTINEAU, a most important means of forming a true diagnosis is in the hands of medical men, and one which will save them much worry and anxiety. Many cases arise in which it is of the utmost importance a correct decision should be arrived at. It is claimed that in the case of gonorrhœal discharge the latter is always acid, while in the simple form of vaginal discharge it is alkaline. The reaction upon litmus-paper in this case settles the question. This would also form a very valuable means of deciding in cases of rape in which the persons committing the crime were supposed to have been suffering from gonorrhœa at the time, and to have imparted the specific disease to the victim. Further evidence may be looked for to establish or negative what, if true, will be a great step in advance in our clinical knowledge of the subject.—*Medical Press*, June 2, 1886.

THE USE OF LEMONS IN THE TREATMENT OF INTERMITTENT FEVER.

According to the Paris correspondent of the *American Practitioner and News* (June 12, 1886), DR. MASLENNIKOFF has treated twenty cases of intermittent fever with a decoction of lemons. Seven of the patients were affected by the fever for the first time, three for the second, the rest having passed previously through several malarial attacks. In thirteen of twenty cases a quotidian, and in seven a tertian variety was present. In sixteen cases the spleen was found to be enlarged and painful; in fourteen, both during the paroxysms and the intervals.

The decoction was prepared after Maglieri's method,—that is, every evening a whole fresh lemon was cut into very thin slices, put into eighteen ounces of distilled water in an earthen pot, and boiled (for two hours) until six ounces of decoction remained. On the next morning the liquid was forcibly strained through a piece of gauze, and then given to the patient to take immediately in several gulps. The decoction was used in that way for ten or fourteen successive days. In none of the patients did any gastric disturbances occur.

The results obtained by Dr. Maslennikoff were not so successful as those by Dr. Putakhin and others. In only six cases, four of which were of quotidian fever and two of tertian, a cessation of the paroxysms ensued. For two of the remaining patients the paroxysms became less severe, and in three the type of fever underwent a change. In none did any alterations in size of the spleen take place. All cases where decoction of lemons had failed were subsequently mostly very rapidly cured by quinine. The general conclusion reached by the author is that, as far as severe Caucasian fevers are concerned, decoction of lemons has, except its agreeable taste and harmlessness, no advantages whatever over other substitutes for quinine.

THE TREATMENT OF PUERPERAL CONVULSIONS WITH PILOCARPINE.

We have two or three times in previous issues alluded to the use of pilocarpine in puerperal eclampsia. DR. JAS. MURPHY, in the *Lancet* for May 29, 1886, publishes notes of three cases of convulsion occurring in the puerperal state, in all of which pilocarpine seemed to reduce the severity and frequency of the convulsions, and all of the cases recovered, a fact which by itself is sufficient to indicate that in all probability the recovery was partly, if not largely, to be attributed to the use of this remedy. The alkaloid was given in the dose of one-third of a grain injected hypodermically, as often as every six hours or more frequently, if necessary.

URETHAN AS A HYPNOTIC FOR THE INSANE.

Urethan as a hypnotic in mental affections has been subjected to trial by DRS. OTTO and KOENIG in the Hospital for Lunatics and Epileptics in Dalldorf, who have published their results in the *Centralb. für Nervenheilkunde*. It was used in various cases of excitement, all of which are said to have been of a violent nature, in epileptics and hysterical patients, and in the stages of excitement which so frequently occur in idiotic children. In 23 cases 250 doses of this drug were given in watery solution; as much as from 30 to 60 grains or even 120 being given without

producing disagreeable results. In 10 cases of epilepsy, with depression and anxiety, its action was favorable. The authors' most favorable results were, however, obtained in the case of idiotic children, where 20 to 40 grains produced a very satisfactory result, without any disagreeable after-effects. In some of the cases, after the administration of the large doses, nausea was complained of; vomiting occasionally occurring, the patients objected to continuing the treatment with this drug, although the taste itself was not disagreeable to them.

In comparing its effects with chloral and paraldehyde, urethan did not appear to advantage, since the nausea and vomiting were more marked after urethan than after even paraldehyde, and the narcotic effects did not appear to be as marked. In cases of violent excitement, urethan, even in doses of 120 grains, produced no appreciable relief, and the authors think that its employment is best suited to cases of slight depression and anxiety, as seen in their epileptic cases. The above results were obtained in the treatment of the female wards of the hospital, and somewhat similar results were obtained in the treatment of male cases. Here also digestive disturbances, such as loss of appetite, nausea, and vomiting occurred, and here urethan was found to be of very little value in the treatment of violent cases of excitement, but it occasionally produced very satisfactory results in milder cases. The authors think that it is not as well borne or as valuable in its action as paraldehyde.

Dr. Rottenbiller, writing in the same journal, relates his experience with urethan in the insane asylum at Budapest. Dr. Rottenbiller employed this drug, commencing with small doses,—that is, about 7½ grains, with which he obtained in almost all cases from one to two hours' sleep. From doses of 30 to 60 grains he obtained nearly always from six to eight hours of quiet sleep, though, when the excitement was marked, this hypnotic effect was less evident.

In most cases sleep occurred from fifteen to thirty minutes after the administration of the drug, though sometimes the patients remained perfectly quiet for two or three hours, and only slept for a short time. In only two cases did he find that it produced vomiting. His experience, therefore, leads him to feel confident that in most cases the administration of from 30 to 60 grains will produce several hours' quiet sleep without disagreeable after-effects, while larger doses are to be avoided. From the fact that several hours' sleep could only he obtained with such large doses, and that the quantity necessary to produce this effect nearly always caused disturbances of the stomach, Dr. Rottenbiller made a number of experiments with the subcutaneous employment of urethan, using a thirty per cent. watery solution, and giving doses of about 4 grains. In nine cases in which he employed it in this way he found that only two injections of 4 grains produced six to eight hours' sleep, one-fourth the quantity being thus necessary to produce the effect obtainable when administered by the mouth. The injections caused no local reaction or abscess, and the patients did not complain of pain. Should these conclusions be confirmed, economy alone should recommend this mode of employment of the drug.

SOME POINTS IN THE TREATMENT OF MORBUS COXÆ.

At a meeting of the Academy of Medicine in Ireland, held Friday, March 19, Prof. Thornley Stoker read a paper advocating the employment of bone-drainage by trephining the trochanter as a treatment in cases of morbus coxæ of the femoral variety (*Medical Press*, June 9, 1886). He referred to the paper on this line of treatment read by Dr. Kirkpatrick before the British Medical Association in 1867, and to the later communication of Mr. Greig Smith in 1881. Prof. Stoker dissented from the use of caustic potash as recommended by Dr. Kirkpatrick, and advocated the use of a small trephine, supplemented by a drill if necessary. He gave details of two cases in which he had operated. In one, a well-marked case of femoral hip-disease in a girl aged 11, which had advanced to the second stage, a complete and rapid recovery had taken place. The other, a more advanced case in a child aged 5 years, had been much benefited, but was still under treatment. Prof. Stoker concluded his communication by putting forward these conclusions: 1st. That tunnelling the trochanter and neck is a reasonable and good practice in cases of femoral coxalgia, and is calculated to afford drainage and remove the products of disease; 2d. That it is more in accord with surgical science, while adopting the essential principles of Dr. Kirkpatrick's plan, to avoid the employment of caustic and rely upon the more precise use of instruments; 3d. That the extended application of the plan, so as to remove the diseased bone or even to drain a joint containing pus, as proposed by Mr.

Greig Smith, is a surgical proceeding worthy of every examination.

The CHAIRMAN said that the method which Mr. Stokes and Mr. Stoker advocated seemed to be very effectual for removing diseases of the hip-joint. That it originated with Dr. Kirkpatrick, of Dublin, was creditable to Irish surgery. He used it more for caries of the bone than for disease of the joint. Mr. O'Byrne had treated such cases in the early stage with hydrargyrum cum creta, which was now recognized as an antiseptic. Beyond that stage the operation for drainage offered a fair chance.

MR. CROLY recalled a paper which he heard read by Dr. Kirkpatrick on the treatment of joints by caustic, and said he saw some interesting cases thus treated by him in the North Dublin Union Workhouse Hospital, while for many years since he had himself been in the habit of using potassa caustica for disease of the metacarpal bones and of the small bones of the foot, as the scapoid, the cuboid, and cuneiform, with very successful results. In disease recurring after excision of the elbow he saw extraordinary results from boring with potassa caustica. On Tuesday, 16th instant, in the City of Dublin Hospital, he bored the trochanter in a child for all the symptoms of morbus coxæ, cutting down on the trochanter and boring with potassa caustica, making a funnel-shaped opening. That morning the child said she was free from pain. His experience led him to conclude that the caustic potash had more influence in relieving pain and tension than the use either of the knife or the trephine. Although he had failed to see the pus, he had not failed to cure the patient. There was no case he disliked so much as that of a child lying a year in bed, with weight and pulley and water-cushions, receiving good diet and cod-liver oil, and yet at the end the child might get up no better; but with the boring process the result promised to be different, and surgeons would not dislike meeting a case of morbus coxæ at the proper stage, cutting down on the trochanter and trephining or boring, or doing both, as being a very simple procedure.

MR. KENDAL FRANKS thought the operation ought to prove most successful on theoretical grounds, but not those on which the authors of the papers (who, however, deserved gratitude for reviving an operation originating in this country) relied. Undoubtedly opening into the trochanter and neck of the bone, with free drainage, promised good results. To talk of ascites as simple and strumous, and of the disease beginning in the bones and synovial membrane, was the pathology of the past. The pathology of the present established two classes of cases,—those that were tubercular and those that were not. In the large majority of hip-joint cases the disease was localized tuberculosis, the same as in the lungs and the so-called strumous glands. Ollier, of Lyons, had microscopically proved that in strumous disease of the ankle and hip-joints it was tubercular disease of the bones and the synovial membrane and of the tissues round the joint. Statistics showed that of two hundred and fifty cases tabulated by Volkmann in his own experience, and in which microscopical examination was made of bone taken out at the time of operation, there were only five or six in which he could not find the bacillus of tubercle. Therefore they had to deal with the simple inflammatory condition of the joint and with the form much more serious which had its origin in tubercle. The simple variety was amenable to cure by counter-irritation and free drainage of the bone. In some cases of tubercular disease, also, Dr. Kirkpatrick's method promised good results. And why? Suppose the foci of the tubercle to be in the great trochanter or in the neck, what better treatment could there be than boring down upon it and scraping it out, and applying caustic potash or any powerful escharotic to destroy the foci and render recovery probable? Of course if the condition of the synovial membrane was simply one of inflammation, and the tubercular disease had not spread, they might expect the inflammatory condition inside the joint would subside when the irritation of the tubercular foci had been removed from inside the bone. But what good could ensue when the bacilli were found swarming over the synovial membrane was not so certain. If they could be certain that the case was a simple one, the simple modes of treatment were the best; but when the case was strumous,—*i.e.*, tubercular,—the only rational method was to remove the foci, and that could be done, if the disease began in the bone, by the boring and scraping process and the application of caustics. If the disease was in the synovial membrane he would scrape out the parts and apply, if necessary, a cautery; but in leaving germs behind there was danger, not so much of the return of the disease in the parts themselves as of the germs being carried along in the lymphatics and causing general tuberculosis.

DR. FOY called attention to a modification of Sir Philip Crampton's treatment as practised

by Dr. Hardy, of Manchester, by slitting the capsule and cutting down on the periosteum.

Dr. Tate mentioned that thirteen years ago a girl, aged 18, was operated on by Dr. Kirkpatrick at the North Dublin Union Workhouse Infirmary. The tubercular affection left her afterwards, and she was now in good health. She had had a child since the operation, and would soon have a second.

Mr. Stokes replied. First, Mr. Stoker's objection to the use of caustic as part of the treatment had been answered by Mr. Croly, who pointed out its twofold advantage,—(1) in leaving a large funnel-shaped opening which facilitated drainage, and (2) in keeping the part open much better than if a simple incision were made. Thus, too, the danger was obviated of the wound being filled too rapidly by granulation, or of the external opening closing and leaving a cavity in which the fluids accumulated and suppuration ensued. The excellent results from that mode of treatment formed an argument against the very recent pathological views of Ollier and Volkmann, which they had been taken to task for not having adverted to, as to those cases being constantly so strumous in their character. He had heard Ollier's paper at the Congress in Copenhagen, and the impression produced was that Ollier was looking at all diseases of bones through tuberculous glasses, for every disease appeared in his point of view to be essentially tuberculous. With that view he could not agree, notwithstanding the high authority in support of it. The rapidity of cure from simple modes of treatment, and the absence of evidence of tuberculous disease in other parts of the body, pointed to the fact that those cases were by no means so frequently tuberculous as they were generally supposed to be. From his own experience certainly he did not think the majority of them were. As to the operation of opening into the large joints and scraping out the diseased parts, he had not done it in the hip-joint, but he had in others with very disappointing results, especially from that procedure in the knee-joint. It was physically impossible to scoop out all traces where there was extensive tuberculous disease. The mode of treatment which he advocated was not to be adopted indiscriminately, but only in selected cases, and in the early stages of the disease. Whatever had been said to the contrary, there was no one more alive than he was to the importance of the most perfect rest that could be obtained by mechanical and other means in the treatment of joint-disease.

Mr. W. Thornley Stoker also replied. With regard to the caustic or no caustic question, he had expressed and felt no very strong opinion. He believed in bone-drainage, and, as stated in his paper, he was open to conviction on the subject of caustic one way or the other. Like Mr. Stokes, he regarded rest as a most important adjunct of the treatment which he advocated. Although Mr. Franks spoke from an Olympian height of modern pathology, he was not carried away either by the positiveness of Mr. Franks' statement or the cogency of his argument; and despite his having decried the division into osteal and synovial cases, he still thought that was the most important clinical division of morbus coxæ that could be made. Upon that he based the value of the treatment which he advocated. He had not overlooked the distinction between tubercular and simple disease. He had mentioned it, but in addressing a learned society it was unnecessary that that subject should enter into the text of his paper as if he were addressing a number of first-year students. He did not believe all cases of morbus coxæ were tubercular, while he was sure a great number of them were.

TWO TRACHEOTOMIES ON THE SAME DAY IN ONE FAMILY—WATER POURED INTO TRACHEAL WOUND TO ASSIST EXPECTORATION.

At a meeting of the Practitioners' Society of New York, held April 2, 1886, Dr. George F. Shrady referred to two cases of tracheotomy which he had recently performed on the same day upon two sisters, aged respectively 2 and 4 years (*Medical Record*, June 19, 1886). He was called to them the day previous to the operations. They were both affected with diphtheria. In the younger the disease was in the fauces and extended downward, and in the older it was confined to the larynx and trachea. Both rapidly developed symptoms of suffocation.

The temperature in the younger child was 102° F., and in the older 101° F. The operations were performed without mishap, first upon the younger sister, and in a few hours after upon the older one. The younger, although temporarily relieved of the difficulty of breathing, died of secondary croup twelve hours afterwards. The older child recovered, discharging through the tube on the fifth day a bifurcated fibrinous cast. In neither of the cases was any chlorate of potassium or iron administered, the treatment consisting in the

freest possible stimulation by milk-punch. The latter, he remarked, was his mainstay in desperate cases. This opinion was shared by Dr. Ripley, who saw these cases in consultation, and assisted at the operations.

There was one item in the after-treatment to which he wished to call attention.

There was, as is usual, a great deal of expectoration through the tube, which was assisted by the inhalation of steam. But the most prompt benefit was derived from pouring lime-water by the teaspoonful directly into the trachea through the wound. This was done at the suggestion of Dr. Ripley, who had frequently used it in his practice with occasional good result.

Dr. Shrady had never seen this method tried before, and was struck by its good effects in dislodging tough mucus and shreds of membrane.

Dr. Ball said he was unable to see how the lime-water could be of any special service, as it was expectorated so quickly, and thought that plain water would be equally as good.

Dr. Shrady said that, so far as the mechanical effect was concerned, water would answer the same purpose. The possible advantage of the lime-water was, that in case any was retained, it might have the effect of loosening the phlegm, or of possibly helping the separation of membrane.

THE TREATMENT OF NEURALGIA BY PARTHENINE.

Dr. Esperon publishes the notes of two cases of neuralgia treated by parthenine, an alkaloid recently extracted from a plant which is known in Cuba as giesta amara (*Les Nouveaux Remèdes*, April 1, 1886). The first was that of a woman, aged 33 years, who, as a consequence of an abortion, suffered from very severe pains in the iliac fossa during the menstrual period. Morphine, chloral, bromide of potassium, were all inefficacious, but quinine somewhat relieved the suffering. In a subsequent attack, characterized by pain, chills and fever, the author diagnosticated ovarian neuralgia. He made a subcutaneous injection of morphine, and gave 1 grain of parthenine every two hours. The effect of the morphine was evident an hour after its administration, but the pain, nevertheless, continued. As a consequence of three doses of parthenine, the pain disappeared, and did not return. The same effect was obtained in another case. The author claims that this substance is especially indicated in neuralgia of malarial origin.

A NEW METHOD FOR THE REMOVAL OF INTRAMURAL UTERINE TUMORS.

Dr. O. Stroinski, of Chicago, writes to the *New York Medical Record* (June 19, 1886) as follows: "After severe losses in removing intramural uterine tumors through the abdominal or vaginal walls, I decided either to abandon entirely any attempts of extirpation of these tumors, or to find a method that would give a reasonable show of favorable results. Lately I have found that continued intra-uterine injections with diluted subsulphate or sesquichloride of iron produce a discharge of mucous membrane, as well as of muscular stratum, and that, combined with the effect of contractions always evoked by these injections, causes the intramural tumors to be forced into the uterine cavity, where they may easily be seized and extracted. I will give the minute details of these proceedings at another time, and will now merely formulate the conclusions which I have arrived at after a careful study and a good deal of experience: 1. Extirpation of intramural uterine tumors through the abdominal or vaginal walls is as unnecessary as it is dangerous; while, 2. There are certain procedures which always transform the intramural into an intra-uterine tumor, which can be easily extirpated; 3. These procedures only should be made use of in the removal of intramural tumors, being entirely harmless, and never endangering the life of the patient nor maiming the sexual organs; 4. Even the largest myoma might be easily removed by this operation; 5. Only tumors situated on the surface of the uterus are excluded from this procedure. I have operated on cases in which large doses of ergot had been taken for a long time without the slightest effect, and in one case in which the tumor had existed before marriage, and a child had been born without the tumor losing its size or changing its position. I will furthermore say, that I have operated in private as well as hospital practice, so that there cannot be any doubt of the reality of the facts."

URETHAN IN THE TREATMENT OF TRAUMATIC TETANUS.

Mr. W. T. Jackman reports in the *Lancet* for June 12, 1886, a case of a boy, aged 15 years, who came under his care with well-

marked symptoms of tetanus, as the result of a crushing of a finger by cog-wheels five weeks previously. The lockjaw was complete, and the opisthotonos well marked; severe paroxysms of pain were complained of, which were greatly exaggerated at night. The patient had noticed his neck and jaw muscles gradually becoming stiff for the past few days, but attributed this to a chill. Choral hydrate in 20-grain doses every three hours was ordered. This relieved the paroxysms of pain slightly during the day, but the lockjaw, opisthotonos, and rigidity of the muscles of the legs remained the same, and the pains were just as severe and frequent during the night. Fluid nourishment was administered and the chloral treatment continued until March 25, when, as no abatement of the symptoms was apparent, after consultation, it was decided to discontinue the chloral during the night, and in its place give the patient 4 grains of urethan every two hours, from 6 P.M. to 6 A.M. The first night of this treatment showed a marked decrease in the severity of the symptoms, and the patient made gradual and uninterrupted progress until April 20, when his recovery was established. The failure of the chloral hydrate to relieve the severe symptoms during the nights, and the well-marked improvement under the influence of the urethan, seem to point to the latter being likely to prove a very valuable drug in the treatment of tetanus, either prescribed alone or as above in conjunction with chloral hydrate.

THE ACTION OF FATTY BODIES ON CARBOLIC ACID.

Fatty bodies have a remarkable effect when mixed with carbolic acid, an effect well known to surgeons who employ carbolized oil containing 1 part in 10 of the acid without pain or irritation, whereas 1 part of the acid to 40 of water produces a distinctly irritating effect. This property appears to belong to all the fatty bodies as well as to glycerin, and carbolized soap, containing 1 in 10 of the acid, is also well borne. PERIER has pointed out that only the crystallized acid being so affected, the use of any other form of acid is attended by the usual irritation. Experiments were made with the view of ascertaining whether vaseline had a similar effect, but this was found not to be the case, and if a vaginal examination be made, the finger being anointed with vaseline containing 1 in 20 of the acid, the patient will complain of a burning pain. The question naturally arises as to whether the antiseptic properties of the acid are lessened by the addition of oils at the same time as its irritating qualities. The result of clinical experience seems to prove that this is not the case, and the benefit of a stronger solution in oil may be obtained without the inconvenience of any caustic action.—*Medical Press*, June 9, 1886.

CHRONIC CATARRHAL GASTRITIS.

At the recent meeting of the Association of American Physicians, held in Washington, DR. FRANCIS DELAFIELD, of New York, read an elaborate paper on "Catarrhal Gastritis" (*Boston Med. and Surg. Journ.*, June 24, 1886).

In the consideration of the treatment of the disease he brought out many new points.

In attempting to establish a satisfactory treatment for chronic gastritis, he shows that it is important to state as clearly as possible the problem which is to be solved.

First, then, we must remember that all the patients who suffer from gastric symptoms do not necessarily have chronic gastritis.

Besides those who have functional disturbance of the stomach, or cancer or ulcer of the stomach, we find many others in whom gastric symptoms are due to diseases of other parts of the body. Anæmia, uterine disease, the neurotic and hysterical condition, and constipation, often behave in this way. In old people, the function of gastric digestion is often impaired simply as the result of old age. To each one of these conditions belongs its appropriate treatment, but it is not the treatment of chronic gastritis.

Still further, we must remember that in many cases of gastritis, palliation of the symptoms is all that we can hope for. This is true with the gastritis associated with heart-disease, emphysema, phthisis, cirrhosis, Bright's disease, gout, rheumatism, and alcoholism. It is also true of the cases in which the inflammation has gone on to the destruction of the septic and mucus glands. After excluding all these, there remains a large and important group of cases of chronic catarrhal gastritis, in which we may hope not only to alleviate the symptoms, but to cure the disease.

It is evident, from the nature of the disease, that any treatment intended not merely to palliate, but to cure, must be of long duration, and that it must be repeated from time to time, when the inevitable relapses occur.

The different plans of treatment, then, which may be adopted are—

The curative effects of climate and mode of life.

The regulation of the diet.

The administration of drugs.

The use of local applications directly to the inflamed membrane.

I. CLIMATE AND MODE OF LIFE.

The two points of importance are,—first, the locality selected must be one where the patient can lead an out-of-door life; second, the patient must live in this climate either for several years, or for a considerable part of each year.

Excellent as this method of treatment is, it is evident that it can be carried out only by a limited number of persons.

II. THE DIET.

The regulation of the diet is a matter which demands consideration in every case of chronic gastritis. In trying to ascertain the best way of feeding these patients, he has found only one satisfactory method, and that is to feed them experimentally with different articles of food, and then, after an interval of several hours, wash out the stomach, and see how thoroughly these articles of food have been digested and removed from the stomach. After pursuing this course for a number of years, Dr. Delafield has arrived at the following conclusions:

It is necessary that the patient should be well fed; a starvation diet never answers.

The stomach does not require any rest from the performance of stomach digestion; on the contrary, it is all the better for being called on to perform its natural functions.

The patients' own ideas as to what food agrees with them are usually erroneous. They are apt either to starve themselves or to select the least nutritious articles of food.

The use of artificially-digested foods, or of substances such as pepsine to assist stomach digestion, is unnecessary.

The starches, oatmeal, cornmeal, bread, the cereals, the health foods are, as a rule, bad. Portions of them remain undigested in the stomach for many hours.

Milk in adults is an uncertain article. It answers very well for some persons, not at all for others.

Meat is usually readily and well digested, but there are occasional exceptions to this rule.

Vegetables and fruits can be eaten, but the particular varieties must be selected experimentally for each patient.

He does not believe that any case of chronic gastritis is to be cured by diet alone. Even the exclusive milk diet, while it often relieves symptoms, is, as a rule, only temporary in its effect, so that the patient simply loses a certain amount of time by employing this instead of more efficacious plans of treatment.

III. THE ADMINISTRATION OF DRUGS.

The advantageous use of drugs belongs to the earlier stages of chronic gastritis. At that time they often palliate symptoms, and sometimes even seem to cure the inflammation. In the later stages of the disease their use becomes more and more unavailing. The reliable drugs for this purpose are not numerous,—the preparations of soda, potassium, and bismuth, the mineral acids, glycerin, sometimes carbolic acid, sometimes iodoform, sometimes the bitter infusions. If none of these answer, it is hardly worth while to look any further. If we can combine, with the administration of drugs, the regulation of the diet and of the mode of life of the patient, then, of course, our chances of success are much greater.

IV. THE USE OF LOCAL APPLICATIONS MADE DIRECTLY TO THE MUCOUS MEMBRANE OF THE STOMACH.

This the author regards as the most efficacious plan of treatment for those patients who are not able to leave home and seek a proper climate, but ask to be relieved without interruption to their ordinary pursuits. The local applications are readily made by the introduction of a soft rubber tube through the œsophagus into the stomach.

Liquid applications are the best. They should be made in such quantities as to come thoroughly into contact with the entire surface of the mucous membrane, although the pyloric end of the stomach is the region where the inflammation is principally situated. They should be made at a time long enough after eating for the stomach to be as nearly empty as possible.

For many cases warm water alone in considerable quantities is the only local application needed. In some, however, there is an advantage in medicating the water, and for this purpose he employs a variety of substances.

The alkalies, the mineral acids, bismuth, carbolic acid, the salicylates, iodoform, bella-

donna, ipecac, gelseminum, may each one be employed according to the particular case.

For the first week it is often necessary to put the patient on a milk diet, and this can be done even with those patients who, under ordinary circumstances, cannot take milk at all.

Then, after a time, to the milk we add one solid meal composed of meat alone. Next, this single meal is increased by the gradual addition of fruits, vegetables, and bread. Then comes the giving of two solid meals a day instead of one, then three solid meals, and now we get rid of the milk in part or altogether.

For the first week of this treatment it is wise not to expect any special improvement. Indeed, even a longer time than this may try the perseverance of the physician and the confidence of the patient.

Sooner or later, however, the expected improvement begins,—the nausea and vomiting cease, the constipation or diarrhœa is improved, the flatulence is no longer troublesome, the headache becomes less frequent, and, of more real value than these, the improvement in the general condition of the patient becomes evident. The color, the weight, the appetite, the sleep, the spirits of the patient, all show a change for the better. Of all the symptoms, the pain is the one which is apt to persist the longest.

For two or three months the patient has to be kept under observation, and the applications to the stomach made by the physician. After this the patient is dismissed, but continues the treatment himself, first every other day, then twice a week, then once a week for several months. The regular relapses of the disease are managed in the same way, but are much more quickly relieved.

THE DIURETIC ACTION OF CLOUDBERRIES AND WATERMELON.

In the course of a prolonged study of diuretics, Prof. S. A. Popoff, of St. Petersburg (*Vratch*, No. 4, 1886, p. 34), examined the action of three remedies used as diuretics in Russian popular medicine; they were cloudberries (*Baccæ Rubi Chamæmori;* Russian *moroshka*), watermelon (*Cucumis citrullus;* Russian *arbcoz*), and dew-worms (*dojdewyé tchervi*).

1. *Cloudbèrries* are used chiefly by peasants in Northern Russia, in the shape of an infusion of the berries in water or vodka (aqua vitæ). Scientific medicine contains but scanty fragmentary notes on the drug; thus, Dr. Trinkovsky (*Meditz. Zeitung Russlands*, No. 44, 1856) stated that he successfully employed the infusion as a diuretic in a case of hydrocephalus in a child. Dr. Popoff first prepared a decoction and extract of the fresh berries, and then—after a series of experiments on man and animals had convinced him of the really powerful diuretic action of the drug—proceeded to isolate its active principle, after the method given by Prof. A. A. Loesch for the extraction of blattic acid from cockroaches. He obtained in that way an acid in the shape of an almost colorless powder, easily soluble in spirit of wine, but very sparingly soluble in water. It gave crystallized and easily soluble salts with alkalies. Experiments on cold- and warm-blooded animals showed that the acid, like antihydropin (blattic acid), belonged to the class of "essential diuretics" (that is, drugs which act solely on the renal tissue); for, on its subcutaneous or intravenous introduction even in very large quantities, it did not give rise to any considerable changes either in the cardiac action or in the arterial tension. The diuretic action of the acid was manifest under all methods of introduction into the system, but the strongest effects were observed on intravenous injections (of 2 centigrammes of the sodic salt for each kilogramme of the animal's weight). Division of the spinal cord, of the splanchnic nerves, curarization, etc., increased the diuretic action of the drug. Stimulation of the splanchnic nerve did not diminish the secretion of urine. But, while fully recognizing that cloudberries are a good and safe diuretic, the author yet comes to the conclusion that, as such, they are considerably weaker than antihydropin and cannot replace the latter.

2. *Watermelon.*—This, by the way, was recommended by Prof. V. A. Manasseïn, in the *Vratch*, November, 1881, p. 351, as an extremely cheap, but effective substitute for grapes in the treatment of chronic congestion of the liver, chronic intestinal catarrh, etc. It is extensively used by the peasantry in Southern Russia (especially near the river Don, and in the Caucasian districts) in the form of the freshly expressed juice, as a diuretic draught in cases of dropsy, uro-genital affections (especially gonorrhœa), etc. The author experimented with the inspissated fresh juice or syrup of the fruit, and with commercial melon-honey (*arbooznyi mïod'*). The diuretic action proved most striking: when animals received from 50 to 100 grammes of the syrup (with food) in twenty-four hours, the daily quantity

of urine was three or four times greater than under ordinary conditions; again, on intravenous injection of the syrup, "the urine for several minutes flowed in a stream from a canula tied into the ureter." On the subcutaneous injection of 0.4 to 0.7 gramme into frogs, the syrup rapidly slows the cardiac action up to complete arrest in diastole, and produces prostration with loss of voluntary movements, while reflex action and the excitability of the motor nerves and muscles remain intact. When very large doses are used, in the latest stages there is observed, also, a failure of reflexes and of nervo-muscular excitability; but the phenomenon is then undoubtedly nothing but an ordinary symptom of præmortal agony. In dogs, the internal administration of 500 grammes at a time produces no effect, except powerful diuresis. Intravenous injection of 1 to 2 grammes of the syrup causes an immediate increase in the secretion of urine, the latter assuming a dark color, and containing sugar. This increase lasts for ten to sixty minutes, and is accompanied only by a slight fleeting decrease of the blood-pressure. On the injection of 0.25 to 0.5 gramme for each kilogramme, a considerable fall of the pressure and a great acceleration of the pulse rapidly follow. An intravenous injection of 3.0 grammes per kilogramme produces a further fall of the pressure and a fleeting increase, with a subsequent sudden enormous decrease in the frequency of the pulse, the animal dying from cardiac paralysis. As some special experiments show, the quickening of the cardiac action is dependent upon the syrup acting on the peripheral ends of the vagi. In all cases, intravenous introduction of the syrup rapidly produced a strong sedative effect, "the animal remaining strikingly quiet, and giving no response to tactile or even pathic irritation." Another group of experiments showed that the diuretic action of melon-syrup was dependent mainly upon its direct influence on the renal tissue.

3. *Dried dew-worms* are used by Russian peasants (especially in the Smolensk Government) in the shape of a powder or an infusion. They, also, possess a decided diuretic action, as will be shown in a forthcoming work of Dr. Shimansky, who is now studying, under the guidance of Prof. Popoff, the physiological properties of this palatable drug.—*London Medical Record*, June 15, 1886.

A NEW AND ORIGINAL METHOD OF SURGICAL DRESSING.

Dr. Charles W. Strobell, of Middletown Springs, Vermont, writes to the *Medical Record*, June 26, 1886, that he was led by the paper of Dr. Hamilton and the criticisms upon it in recent numbers of the *Record* to consider what improvements might be made upon the modes of antiseptic dressing now in use. The main objection to the ordinary dressings of cotton-wool, gauze, etc., is that it conceals the wound from view, so that inflammation, secondary hemorrhage, and other accidents cannot be detected at their onset, and may become only too well established before the surgeon becomes aware of their existence. In order to obviate this, Dr. Strobell proposes to cover the wound with a thin glass globe, so constructed as to fit closely to the part, provided with two openings for drainage-tubes and a large opening on the top to permit of access to the wound in case of need, without removing the globe. These openings are provided with glass stoppers, so that they can be hermetically closed. The base of the globe is provided with a flange, and its sides, up to within two inches of the drainage-tube openings, are roughened so as to facilitate the adhesion of the isinglass plaster used in sealing it. When applied to stumps after amputation, a thin rubber band, three inches wide, is applied over the flange, so that it rests with one-half its width on the integument of the limb to secure additional safety. The flange is covered on its external surface with isinglass plaster adhesive on both sides, so that the band of rubber shall adhere firmly to the globe. In the case of an amputation at the knee-joint, after the sutures and drainage-tubes are in place, the wound is capped with a disinfected globe of the proper size to fit snugly over the limb, the drainage-tubes in the globe being on a line with the anterior surface of the wound. The rubber band is now turned down over the limb, and strips of adhesive silk, one inch in width, and twelve inches in length, are applied longitudinally from the upper part of the ground portion of the globe up the limb, each strip overlapping slightly the preceding one, a final strip being placed circumferentially around the flange and covering in the ends of the longitudinal ones. In a case of laparotomy an oval-shaped globe may be applied in a similar manner.

The following are the conclusions of the writer: "The method commends itself to the profession,—1. In the complete isolation of wounds that can be obtained in the event of

infection of hospital wards by erysipelas, etc., as the globe can be hermetically sealed. 2. All changes can be noted clearly at any moment with the minimum amount of discomfort to the patient, thereby increasing largely his chances of recovery. 3. The perfection of drainage, which has never been obtained in so great a degree, obviating the necessity of soaking off bandages saturated with dried pus, blood, and serum, often adhering so firmly to the wound that the most gentle manipulation is required to avoid laceration of the tender granulations. 4. Secondary hemorrhage can be detected at the earliest possible moment. 5. The first evidence of inflammation can be noted, and its movement forestalled by removal of the cause. 6. The action of topical remedies can be observed without exposure of the wound to the air. 7. The dressing can be adapted to wounds of almost every description. 8. Refrigerant and thermal water-dressings can be applied with the utmost facility. 9. Lotions or powders can be easily applied to the wound through the main opening in the globe without disturbing the dressings. 10. If it is desired to prevent the ingress of infected air, the drainage-tubes can be filled with plugs of iodoformed or carbolized cotton. 11. In the event of inflammatory swelling rendering the constriction of the base of the globe excessive, the apparatus can be replaced by one of larger size, with less expenditure of labor and time than is required in the application of a Lister dressing. 12. Facility is afforded for determining the therapeutic effect and germicidal action of direct sunlight in the treatment of wounds. 13. By means of long, slender forceps and scissors the sutures, drainage-tubes, and adhesive plaster may be easily removed through the main aperture in the globe. 14. The weight of the apparatus is not as great as that of the ordinary Lister dressing. 15. If perfectly applied there should be no more constriction of the limb than results from moderately firm bandaging. 16. The expense is comparatively light, as the globes can be used indefinitely, being thoroughly disinfected by boiling water. 17. The apparatus may be adapted to any external surface by taking, in special cases, wax impressions and transmitting them to the manufacturer. In conclusion, I will say that my claim to originality is, in my opinion, well founded, as nowhere in surgical works have I seen glass mentioned, used in the way I have indicated, as a protective dressing."

Reviews.

THE INTERNATIONAL ENCYCLOPÆDIA OF SURGERY. Edited by John Ashhurst, Jr., M.D. Vol. VI. New York: William Wood & Co., 1886.

This, the sixth and last volume of the Encyclopædia, completes the labor of its editor, Dr. Ashhurst, who has, he writes, been engaged in the task for more than six years. We congratulate him upon the termination of his work, and feel confident that he has built for himself a monument which will ever remain as an evidence of his industry, perseverance, and learning. The present volume contains contributions from writers who represent several nationalities, and is, therefore, a true international volume.

The article on "Injuries and Diseases of the Œsophagus" is by Dr. J. Solis-Cohen; it also includes a section on "Gastrostomy and Enterostomy." The writer has given a full, clear, and practical monograph upon these subjects. Many of the lesions of this portion of the digestive tract are found to be beyond the power of the surgeon to cure, yet various methods of relieving pain and prolonging life have been devised. Dr. Cohen has made a most thorough investigation of the literature of these affections, and has given us all worth knowing of their diagnosis and treatment.

Dr. John Ashhurst, Jr., contributes the article on "Intestinal Obstruction." This affection was formerly almost exclusively confined to the domain of the practice of medicine, but from the advances which have been made in modern surgery, it has now become one of great importance to the surgeon, and operative interference has a just, indeed an imperative, claim in this lesion. The different forms of intestinal obstruction, their symptoms and diagnoses, are given in a most concise and able manner by Dr. Ashhurst; in fact, we cannot conceive any one failing to readily comprehend the descriptions given by him. The surgical features of the lesions are more especially dwelt upon by the writer, and there remains but little for the reviewer to notice except to praise. The antiseptic method of operating in laparotomy is not advised, although the author can see no harm in the surgeon adopting Listerism, without the spray, "if he thinks that by so doing he renders the operation safer to his patient." Keith and Tait, of England, are quoted as opposed to the Lister method. Again, it is stated that the mortality of the operation has increased since the prevalence of antiseptic surgery. It is

upon this most important part of the technique in laparotomy that we must differ with Dr. Ashhurst. The surgeon who would undertake to perform the operation of opening the abdominal cavity without employing antiseptic precautions,—not Listerism as understood by many, but Listerism as meaning aseptic measures,—we believe does so thinking he is doing the best for his patient; but, in our judgment, and in that of those who have had a large experience in this class of operations, the neglecting to use all measures that have been found by the majority advantageous to success, is not doing the best for the patient. Both Keith and Tait we consider to be the best exponents of aseptic surgery; indeed, the minuteness of technique practised by these operators, in order to carry out as near as possible an ideal aseptic condition, can scarcely be excelled. An increase in the mortality of about two per cent. is observed in the statistics given by Dr. Ashhurst, taken from his former table published in 1874, and his present one, from which he concludes that antiseptic surgery has not diminished the fatal termination in this operation. That there has been an increase in the number of deaths during this period of ten years is not at all to be wondered at; in fact, when it is recognized that the frequency of the operation has increased fivefold during this period, we can only congratulate ourselves upon the advance in surgery which has encouraged surgeons to attempt an operation that formerly had been so seldom undertaken. To censure antiseptic surgery for the increased mortality we believe to be unjust, and we cannot but think that Dr. Ashhurst upon this point is in accord with us.

"Injuries and Diseases of the Rectum," by William Allingham, F.R.C.S. This surgeon, so well known as a writer upon these affections, has written a somewhat brief, but decidedly instructive, and in no way speculative article. It is evident that personal experience and great familiarity with these lesions have given the author the necessary training to write as he does, and his advice in the treatment of these diseases can generally be followed without hesitation. The section on the anatomy and physiology of the rectum is especially worthy of notice, and its study will greatly assist in more readily understanding the different pathological changes, and to more correctly apply means for their relief. We find it stated that cases of stricture of the rectum and ulceration not cancerous are considered to be due to tertiary syphilis, and are not the result of contamination by the discharges from chancroids. In this we believe the writer to be in the right, and although most surgeons are opposed to his view, we think a careful investigation of these cases will demonstrate their error. The section on hemorrhoids includes all the surgeon may require to diagnose and to treat these very frequent lesions. Preference is given to the crushing operation, but in certain cases the ligature is to be used. The injection of carbolic acid, caustics, or astringents, the removal with the écraseur, the application of acids, the galvanic cautery, the clamp, and actual cautery are all said to "have little to recommend them; when they are not uncertain methods they are dangerous, and occasionally they combine both danger and uncertainty of result." To all of which we agree, making, however, an exception in favor of the clamp and actual cautery. This method we have followed for several years, and the results have been very successful.

Dr. E. L. Keyes has written the article on "Urinary Calculus," and we are most favorably impressed with the way in which he has presented the subject. The causes, geographical distribution, classification, structure, both chemical and gross, and different locations where urinary calculi may be met with are all given in a masterly manner. Turning to the section that discusses stone in the bladder, the most important and most frequent of urinary calculi, we find that the writer does not disappoint our expectations. While other surgeons have been duly accredited with their labors in this field, and their work fully appreciated, Dr. Keyes has also written freely of his own personal experience and observations. It almost seems as if the diagnosis and treatment of this affection were about as near perfection as surgeons may reasonably hope for. Indeed, Dr. Keyes writes, "My general impression is that the operation is reasonably (but not entirely) safe, even where the kidneys are unsound, and that with perfectly healthy kidneys litholapaxy, properly performed, is nearly as harmless an operation as passing a catheter." A method of diagnosis by means of the Bigelow apparatus for washing in litholapaxy, in which the striking of the most minute particle against the tube may be felt by the surgeon, has proved in the hands of Dr. Keyes successful when all other means had failed. The suprapubic operation is fully described, including the more recent method advocated by Petersen, in which the distended bladder is lifted

out of the pelvis by forced dilatation of the rectum, thereby removing greatly the danger of injury to the peritoneum. This is the operation which has lately been so favorably presented by Sir Henry Thompson; indeed, he is inclined to believe that the future operations for stone will be limited to this suprapubic one and that of litholapaxy. The conclusion of Keyes is, however, not so favorable. He writes, "My conclusion from the evidence, therefore, is that the high operation (suprapubic) is suitable for the management of very large stones, for encysted stones, for stones complicated by tumors of the bladder, and for certain foreign bodies, but that it is not appropriate for general application." The section on litholapaxy is quite exhaustive and excellent. The directions for manipulating the instruments in performing this operation are given so very clearly that one cannot fail to fully understand them, and it is very evident that the writer is speaking from actual experience. The selection of a method of radical treatment in cases of stone is at times a perplexing question for the surgeon to decide. Dr. Keyes, from his experience, has reached the following conclusions as to the cases in which lithotomy is to be preferred:

"1. All male children before puberty.

"2. All cases complicated by very severe chronic cystitis.

"3. Cases of tumor of the bladder complicating stone.

"4. Some cases of prostatic overgrowth not complicated with atony.

"5. Some cases of very large prostate through which instruments cannot readily be made to pass.

"6. Cases complicated by severe deep urethral stricture.

"7. Cases of very large or very hard stone.

"8. Cases of encysted stone.

"9. Cases of certain foreign bodies.

"All other patients who are proper subjects for radical operation may be best dealt with by lithotrity; very small stones possibly by the old-fashioned operation without ether, perhaps with cocaine, but all other calculi by litholapaxy."

Professor Hingston's contribution on "Lithotrity" is a most admirable paper, full of sound advice and practical observations. The writer is an ardent advocate of this operation, and believes it to be the one which will eventually supersede all others, since for him age, condition of the bladder and kidneys, or urethra are equally suitable either for lithotrity or lithotomy. He, however, cautions against reckless operating, more especially in the use of the evacuating instrument. "Rapid lithotrity, conducted with care and prudence, and with due regard to the patient's general and local condition, is a most satisfactory procedure; but rapid lithotrity, when it means the invariable completion of the operation at a single sitting, may mean suffering, disaster, and death."

"Injuries and Diseases of the Bladder and Prostate," by Reginald Harrison, F.R.C.S. This article, coming from the pen of so celebrated a writer upon genito-urinary surgery, should entirely satisfy the expectations of all, and, indeed, it is a valuable contribution. The section on hypertrophy of the prostate may be read with benefit by all surgeons, and although the author can suggest no preventive treatment, yet we think him in the right when he advocates early dilatation of the prostatic portion of the urethra. It is to us certainly rational to believe that so soon as any obstruction to the passage of the urine is manifest, an attempt to keep the canal open by means of bougies is the proper course to adopt, and the experience of Mr. Harrison would seem to justify such a conclusion.

The operation of "Prostatotomy" is recommended by Mr. Harrison in cases of hypertrophy of the prostate where there is unusual difficulty in passing the catheter. "It consists in opening the membranous urethra from the perineum, making a section of the obstructing portion of the gland in the median line." A drainage-tube of special form, devised by Mr. Harrison, is introduced through the opening into the bladder, and retained in position from six to twelve weeks. The results obtained by this method of treatment have been such as to encourage the adoption of the operation by Mr. Harrison in several cases. In an affection where the suffering is so great that life is scarcely worth living,—and truly such is the case in some of the long-standing cases of hypertrophy of the prostate,—any means which offers the faintest hope of relief from such misery is justifiable, and it becomes the duty of the surgeon to perform any operation that may possibly allay suffering. Under tumors of the bladder we find no reference to the digital exploration of this organ through incision of the urethra from the perineum,—a method which has been so successfully employed by Sir Henry Thompson; and as there is usually great difficulty in forming a correct diagnosis in these cases, any procedure that is at all likely to aid us ought not to be neglected.

Professor Simon Duplay has written a very exhaustive and most excellent treatise on "Injuries and Diseases of the Urethra." The article discusses exploration, traumatisms, foreign bodies, organic lesions and malformations of the urethra, and urinary fever. The section on stricture of the urethra is entirely a French view of this lesion: English or American surgeons who have contributed any information—and they certainly have done much in this field—are neither quoted nor referred to. M. Duplay, we believe, is in the right when he writes, "Finally, it cannot be too often repeated that the cure of stricture of the urethra is never radical and final, no matter what method of treatment may be employed; and that relapses will inevitably occur if care be not taken to maintain the results obtained by means of treatment continued, so to speak, indefinitely." This opinion, however, is contrary to the opinion held by Otis, who claims that the cure is permanent when the operation as proposed by him is adopted. The methods of treatment in this lesion, proposed by M. Duplay, are either cauterization, dilatation, or urethrotomy. Cauterization is a procedure not advised by English or American surgeons of to-day; yet, in the opinion of M. Duplay, in certain cases it answers a good purpose. It is only to be resorted to, according to him, as an auxiliary to dilatation, never should be deep and destructive, and preference should be given to cauterization practised from before backwards. Dilatation is the method most approved of by M. Duplay. The Voillemier division into inflammatory and mechanical dilatation is adopted by him. The former is understood by English and American writers to be continual dilatation, and the latter known as gradual and rapid dilatation. Inflammatory dilatation, and the pathological phenomena which this treatment occasions, are fully described, and it is thought to this method "the first rank should without contradiction be accorded." Mechanical dilatation is divided into gradual, rapid, forced, sudden, and forced injection. Of these methods, M. Duplay gives the preference to gradual dilatation when applicable, and sudden dilatation or divulsion is, from his own experience, thought to have the advantage of giving better results than internal urethrotomy. This opinion is not accepted either by English or American surgeons, who almost without exception concede the advantage to internal urethrotomy over divulsion; indeed, the latter operation is seldom advised by them, and a few consider it to be a dangerous method. The section on "Spasm of the Urethra" is worthy of special notice, especially as this symptom is rarely so fully discussed in English or American works which treat of these diseases. Malformations of the urethra is the one section of all others included in M. Duplay's article which should be carefully studied by surgeons who may have occasion to perform any operation to remedy these defects. The methods proposed and practised by him seem to be most admirably adapted to cure these lesions, and his results appear to have been very satisfactory. Of the various theories advanced to account for the development of urethral or urinary fever, M. Duplay believes that that of "phlebitis and nervous exhaustion belong to history, and are absolutely untenable; there remain the theory of direct absorption and the renal theory; equally rational, equally in accord with recent advances relative to the pathological physiology of fever, they both make urinary fever the result of a systemic intoxication with the constituents of the urine; the first admits the resorption of these constituents by a point of lesion in the urinary passages, the second maintains their non-elimination by a chronically altered kidney, or by one the function of which is temporarily disturbed by a passing congestion of reflex origin." In deciding between these two theories, we are inclined to think with M. Duplay that both are concerned in producing two very different forms of urinary fever, one an acute or rapid, the other chronic or slow. To the former the reflex theory seems to us most applicable, and the resorption theory to the latter.

"Injuries and Diseases of the Male Genital Organs," by H. Royes Bell, F.R.C.S., includes injuries and diseases of penis, affections of scrotum, hydrocele, hæmatocele, varicocele, anomalies of testis, affections of cord, injuries of testicle, orchitis, tumors of testicle, and functional disorders of male genital organs. Very concise and thorough descriptions of these various diseases are given, and the sections on "Tumors of the Testicle" and "Functional Disorders" are especially worthy of careful reading.

Professor Parvin has written a very excellent paper on "Injuries and Diseases of the Female Genital Organs." It includes the pathological changes, traumatisms, and functional lesions of these parts that may demand surgical treatment for their relief or cure. Emmet's operation for laceration of the cervix uteri is thought well of in suitable cases by Professor Parvin, but it is not to be un-

necessarily resorted to. He writes, "While the mortality is not great, in view of the important benefits which this procedure confers when employed in suitable cases, and while proper precautions will no doubt very much lessen this death-rate in the future, it is important that the operation should not be regarded as entirely devoid of danger, and thus rashly advocated or recklessly performed." Perineal lacerations are very fully discussed, and we think with Professor Parvin that it is good surgery, when such lesions do occur, to perform the immediate operation. The very formidable operation of extirpation of the entire uterus, in cancer of this organ, we have always regarded as scarcely to come within the limits of justifiable surgery; yet the operation has its advocates. Professor Parvin writes concerning it, "Extirpation of the uterus for cancer is being so frequently done, at least abroad, and is, if not beginning to be more generally received as a legitimate operation, at least so much less decried than it was at first, that the vaginal method of its performance will be given."

The paper by Dr. Robert P. Harris on "The Cæsarean Section and its Substitutes; Laparotomy for Ruptured Uterus and for Extra-Uterine Fœtation" is a most interesting and valuable study of these operations; and all that can be of any assistance to the surgeon, if so unfortunate as to be required to perform any of these operations, he will certainly find in this article. Of the various methods proposed in order to perform the Cæsarean section, Dr. Harris gives the preference to the Porro operation. He writes, "The Porro operation has entirely superseded the old method in most of the lying-in hospitals of Europe, and has reversed their tables of mortality completely. . . . It is true that antiseptic measures, preparative treatment, and early operating have had much to do in effecting this, but there is also a very decided diminution of the death-rate, due to the operation itself."

"Ovarian and Uterine Tumors," by Charles Carroll Lee, M.D. This paper includes ovarian and uterine tumors, oöphorectomy, and hysterectomy. The operation of ovariotomy is very fully described, the directions for its performance quite explicit, and strict antiseptic precautions are insisted upon. Battey's operation is minutely described, the indications for resorting to it are given, and include two main groups,—"1. Neurotic conditions from ovarian irritation; 2. Hemorrhage with or without uterine tumors." In regard to the propriety of performing this operation, Dr. Lee writes, "As to the clinical importance of Battey's operation, it may be said to be still *sub judice;* but, in properly selected cases, each year's experience shows its greater value."

Professor Ollier's paper on "Inflammation of the Bones," although it is one of the briefest in the volume, is, however, one of the most valuable. The subject is treated in a most masterly and scientific manner. More especially is the section relating to the "Influence of Osseous Inflammation on the Growth of Bones, and the Remote Consequences of Acute Inflammations occurring in Infancy and Adolescence," of interest to the surgeon. This phase of the subject has been but little studied, and the practical conclusions drawn by Professor Ollier are of the greatest importance in the treatment of this class of diseases. There is much that we would like to discuss contained in this contribution, particularly the views expressed in regard to the various pathological phenomena which are said to take place in the course of the different inflammatory processes occurring in osseous tissue; space, however, will not permit, and we can only advise a careful reading of the views here found. In writing on the infectious inflammations of bone, Professor Ollier is not yet ready to accept a septic micrococcus as the only etiological factor in this disease. He writes, "However it may be as to the specific character of these microorganisms, which we should not yet either reject or adopt, we shall find in our clinical study of the affection strong reasons to admit a primary infection." The section on the "Treatment of Bone Inflammations," based, as it is, upon a most thorough study of the pathological changes, seems to us to admit of no question as to its correctness, and an adoption of the advice given will rarely fail to be advantageous. Professor Ollier is a firm believer in antiseptic surgery, and an ardent advocate for its employment in bone-operations. He says, "In operations upon man and in experiments upon animals, it is possible nowadays, by means of vigorous antisepsis, to preserve the vitality of bone-tissue after the severest traumatisms. Formerly necrosis almost always resulted under these circumstances; the wounds became inflamed, and, the vessels of the bone being obliterated, its death was the inevitable consequence."

"Scrofulo-Tuberculous and other Structural Diseases of Bones," by Eugene Vincent, M.D. This article, from the pen of a pupil

of Professor Ollier, is, as would be expected, an interpretation of the advanced views held upon the nature of these lesions. Scrofula and tubercle are considered together on account of the similarity of their pathological histology; indeed, the writer says, "Scrofula is only a mitigated manifestation, initial and usually external, of tuberculosis, and it leads to the latter more or less rapidly." In seeking to ascertain if there is present an infecting agent in tuberculosis, M. Vincent writes, "The general tendency of thought is at present altogether in favor of a parasite, which, in spontaneous tuberculosis, is introduced into the organism by the air-tubes, or the digestive or other passages, fixes itself in the tissues and fluids, the blood especially, and undergoes evolution there, when the soil is favorable to it by a defect of resistance, hereditary, innate, or required." He further adds, "The bacillus (of tuberculosis) might be considered the universal criterion of tuberculosis, and might take the place of the gray granulation, the tuberculous follicle, and the giant-cell. Nevertheless, a conclusion must not be reached too hastily. For MM. Malassez and Vignal have just declared, in a communication to the Société de Biologie, that they have not found any bacilli in lesions which clinical observation and experimentation have shown to be undoubtedly tuberculous; and that they have found in them another form of micro-organism,—micrococci joined in zöoglear masses. There would appear to be, then, a tuberculosis with bacilli and a zöoglear tuberculosis; and I would add, there are still many obscurities to be cleared up, in spite of the progress made. It is evident that clinical observation remains, up to the present time, our surest guide." And, again, in writing on encysted tubercle in bones, he says, "The micro-organism of encysted tubercle is probably not the same as that of tuberculous osteopathies with a more markedly invading and acute course. It may not be the bacillus of Koch; it may be one of its evolutionary forms, either more perfect or less advanced. It is quite reasonable to think that the different forms of tuberculosis depend upon different micro-organisms, or, better still, upon a single parasite with many metamorphoses, and which, according to its soil, goes more or less completely through the cycle of its possible destiny." From these quotations it is evident that the specific nature of tuberculosis is accepted by M. Vincent, and we ourselves have, from our own observations and study of this disease, been gradually led to believe that the views of those who advocate a micro-organism as the cause of tuberculosis are more in accordance with a scientific understanding, and more capable of explaining the different phenomena of this affection, than any other previously advanced theories. Caries, which has formerly been considered an inflammatory process in osseous tissue and the analogue of simple inflammation in the soft tissues, is placed by M. Vincent among osteopathies which are probably tuberculous. He writes, "The clinical course and the microscopic lesions being the same in caries and tuberculous affections of the bones, we must look to histology and to experimentation for proofs of the tuberculous nature of the former. Histology has discovered tuberculous nodules in caries." He further writes, "It is possible that the parasite may be a different one, and that, in looking for the bacillus, the special micro-organism of caries has not been seen. This point requires further investigation. But we may conclude even now, from what is admitted, that caries is a tuberculous affection of the bones grafted upon a chronic rarefying osteitis." Spina ventosa is also placed in the same class with caries, and considered to be a disease of tuberculous nature. As an evidence of the opinion of M. Vincent in regard to the nature of these bone-lesions, we quote the following: "The more we advance in the study of diseases of bones, the more we see the ill effects of tuberculosis multiply. I am persuaded that the greater number of cases of periostitis and osteo-periostitis, in children and in cachectic adults or old people, are caused by deposits of tuberculigneous parasites, and by their evolution, which varies according to their peculiar nature, the soil invaded, and the part of the soil in which they collect and remain." The section on the "Treatment of Tuberculo-Scrofulous Osteopathies" demands careful study. Both general and local measures are advised; the former more especially, "since the affection of the bones is only a manifestation of the constitutional vice, hereditary or acquired, which has engendered it." Local treatment is to lend its assistance to the general treatment, and antiseptic precautions are always to be used. We only mention the sections on rachitis, osteomalachia, and fragilitas ossium in order to direct attention to the views of M. Vincent.

Professor Poncet has written the article on "Tumors of the Bones." These neoplasms are frequently a source of considerable perplexity to the surgeon. Their diagnosis is

often very difficult, and their treatment generally demands an operation. A study of Professor Poncet's contribution, we think, cannot fail to assist both in diagnosing and treating this class of lesions.

"Orthopædic Surgery: the Treatment of Deformities," by Frederic R. Fisher, F.R.C.S. This paper includes club-foot, curvature of bones, deformities of lower and upper extremities, lateral spinal curvature, wry-neck, and congenital dislocations. The various forms of club-foot are described in a concise and clear manner. The pathology of this lesion is given, in so far as well-established conditions are known; undecided or disputed points are not discussed. The treatment of the several varieties of club-foot is described in full, and, with few exceptions, we find it judicious and skilful. The directions given for performing the operation of tenotomy are very explicit and clear, but we prefer the employment of the blunt-pointed knife to divide the tendon, after making the incision of the skin and fascia, more often than recommended by Mr. Fisher; it is equally as effective, and not so apt to cause a mishap as the sharp-pointed knife. No reference is made to the treatment of young children by means of manipulation without operation, nor to forced manipulation in bad cases. Both these procedures have given good results, and are very strongly urged by some surgeons. The Adams's modification of Scarpa's shoe is used when applicable by Mr. Fisher in the mechanical treatment of club-foot. This shoe is undoubtedly quite effectual, but very clumsy, and we much prefer some of the lighter and neater American-made shoes. Rickets and curvature of the bones are said to occur independently one of the other. The former exists without the latter, and "children acquire curvature of the bones of the leg who present no indications of the rachitic taint." The weight of the body alone is thought to occasion this deformity by Mr. Fisher.

An appendix is added to the volume, in which are found three very important and ably-written papers,—"Construction and Organization of Hospitals," by Edward Cowles, M.D.; "Preparation of Military Surgeons for Field Duties, Apparatus Required, Ambulances, Duties in the Field," by Bennet A. Clements, M.D., U. S. Army; and "A History of Surgery," from the erudite pen of Dr. George J. Fisher.

To conclude our notice of this volume, we wish particularly to notice the several translations made by Dr. Dulles. He has rendered the contributions of MM. Duplay, Ollier, Vincent, and Poncet into such smooth and even English that the reader does not recognize he is reading a translation, and we feel confident that the ideas of the original writers have been correctly conveyed. The general index, compiled by Dr. Wharton, is also a very satisfactory feature of the book, and adds much to its value. The labor required to complete such a task can only be appreciated by one who has been engaged in a similar work, and we are grateful to Dr. Wharton for so ably doing his laborious task. The volume, as a whole, is in every respect well worthy to be placed among the previous volumes of the "International Encyclopædia of Surgery;" and what more praise can we bestow?

J. H. C. S.

Correspondence.

COCAINE IN OPERATIVE SURGERY.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—A few months ago it was said that the most unhappy ophthalmologist in the world was the one who had not written an article on cocaine. It now seems that the surgeon who has not reported a case or two in which he has successfully used cocaine as an anæsthetic on other than mucous surfaces is eking out a very unenviable existence. Therefore, in order that I may enjoy my share of happiness in the future, I desire to report two cases in which cocaine was used with very happy effects.

One, being a case of circumcision, might be very properly termed a mixed case, as the solution was painted on the mucous surface, and also injected hypodermically between the integument and the mucous membrane in the following manner: After painting the mucous surface thoroughly with a four per cent. solution of cocaine, the prepuce was drawn forward and grasped with forceps in the hands of an assistant, when forty drops of the same solution were injected beneath the integument in four different places. After ten minutes the operation was performed in the usual manner, without any pain whatever.

The second case was an ulcerating epithelioma on the dorsal surface of the hand of a gentleman aged 70. An Esmarch bandage was applied from the tips of the fingers to a point midway between the wrist and the elbow, where several turns of the bandage were made around the arm and left *in situ*, while that por-

tion enveloping the fingers and hand was removed, and the tumor, which was circular and one and one-fourth inches in breadth, was freely injected at the base with a four per cent. solution of cocaine, and, after the lapse of twelve minutes, was removed with the scalpel, and the edges brought together with no pain whatever, except as the last suture was being put in; the patient, sitting on a chair, observing the operation and feeling perfectly comfortable, as he himself expressed it.

LEWIS SCHOOLER, M.D.

DES MOINES, IOWA, June 19, 1886.

COCAINE IN DYSENTERY.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In a late epidemic of dysenteric flux, confined, in its worst forms, to our river and creek bottoms, under malarial influences, after exhausting my skill in trying to relieve the terrible griping and tenesmus, compelling the sufferer to be up over the chamber every few minutes, I finally made a trial of the hydrochlorate of cocaine, and with great satisfaction. It had the happiest effect, relieving the patient of all pain, and enabling him to drop into a natural and refreshing sleep. I injected 2 to 3 drachms of a four per cent. solution, with a small glass syringe, often enough to give the necessary relief, which about averaged every four hours. I was so much delighted with it, and the profession here take such interest in it, that I thought it might be well to call the attention of the profession to it through the columns of the GAZETTE. I deem it unnecessary to occupy your valuable space in detailing the general treatment of these cases. Will state that while the patients dreaded all other preparations that I injected into the bowel, intended to relieve or palliate their intense suffering, they soon began to beg for the cocaine.

Very respectfully,

R. L. HINTON, M.D.

PRESCOTT, ARK.

FLUID EXTRACT OF BERBERIS AQUIFOLIUM AND SULPHATE OF BERBERINE AS A SUBSTITUTE FOR QUININE.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—There are so many persons who cannot take the salts of quinine, and so many others on whom they have ceased to have beneficial effects, that in malarial districts it is a matter of great importance to have a good substitute for the preparations of Peruvian bark. After extended observations for three years, I can venture to state that berberine will answer in the place of quinine. It will sometimes do more than quinine in cases of quartan ague. I have used for three years the fluid extract of berberis aquifolium in malarial fevers. To break an expected paroxysm of ague, or remittent fever, or bilious dysentery, I begin twelve hours beforehand, and give a teaspoonful every three hours, until four doses are taken. It acts very freely on the skin, often causing free perspiration, which is sticky, like that caused by the preparations of quinine. Lately I have used for the same purpose sulphate of berberine administered in pills or capsules, the capsules being best, as it is difficult to keep the pills dry. In the same doses, and given in the same way, it will do all that quinine will in malarial fevers. I use quinine when there is no obstacle to its use, as it is cheaper.

I prefer it to quinine in quartan ague, as it is more reliable, and will break the chills after arsenic fails.

Before many years the preparations of berberine will become of great importance in the treatment of malarial fevers, and will rank high as tonics. I hope the profession will test the correctness of my observations, and I feel confident that one trial will result in more.

JNO. BROWNRIGG, M.D.

COLUMBUS, MISS.

EXTRACT OF EUCALYPTUS AND GLYCERIN AS A DRESSING FOR ERYSIPELAS.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—Recently I have used a dressing of ext. belladonna and glycerin. Last week I substituted ext. eucalypti fluid. for the belladonna, according to the following:

℞ Ext. eucalypti fluid., part 1;
Glycerinæ, parts 3. M.

This mixture was applied freely over the eruption, out on to the sound skin, covered in with a pad of cotton, and changed often enough to keep the part thoroughly moist and protected from the air. The effect was very satisfactory. There was no subsequent smarting and burning of the disease, and the spread of the eruption was more limited than I ever obtained by any other dressing. The bowels were kept free by the hyposulphite of sodium, and the tincture of iron was given. Having obtained better results than by any former

treatment, I shall try the combination next time.

E. CHENERY, M.D.

65 CHANDLER STREET, BOSTON,
June 18, 1886.

HYDRASTINE—A CORRECTION.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In your issue for May 15, 1886, in a foot-note appended to my article on "The Physiological and Therapeutic Action of Hydrastine," I stated that Messrs. Parke, Davis & Co.'s hydrastine, which was used in the experiments on man, therein related, was only about one-sixth the strength of Merck's hydrochlorate of hydrastine, which had been used in the experiments on animals. Comparative experiments just completed, and which were made with Messrs. Parke, Davis & Co.'s hydrastine and hydrochlorate of hydrastine and with that of Merck's hydrochlorate of hydrastine, show that they are of about equal strength. The impression of the inequality between the two different manufactures of hydrastine was principally based on the greater burning and pungency which the Merck's preparation produced both on the tongue and when injected subcutaneously. While it is true that Merck's preparation produces greater irritation than that of Messrs. Parke, Davis & Co.'s hydrastine, it is also true that it produces no more than the hydrochlorate of hydrastine manufactured by the latter, and the lethal dose of both of them is about the same in the frog. This difference between the salt and the alkaloid was found too late for verification by experiment before the issue of the journal which contained the article, and in order to avoid any toxic effects which the Merck's preparation might produce if given in the prescribed dose the note was, and, as it is now found, too hastily inserted.

In justice to Messrs. Parke, Davis & Co. this correction is gladly made by

Sincerely yours,

THOS. J. MAYS, M.D.

June 23, 1886.

A PORTABLE TURKISH BATH.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In all cases of deep-seated inflammations, whether of the cranial, thoracic, or abdominal cavities, the indication is to equalize the circulation, and thereby relieve local vascular fulness; the same is true of all congestions, that by enlivening the general circulation we can lessen or remove the difficulty.

In urgent cases of croup, delirium tremens, and those in which rapid serous effusion is an alarming symptom, such a provision will always be a very great assistance.

The apparatus I employ has the following construction: There is a horizontal tube two inches in diameter and four feet long, and a vertical one two feet long, gradually expanded into a funnel-shaped extremity six inches in diameter at the base, and joined to the horizontal by an elbow, the several parts being put together without solder.

Under this funnel is placed an alcohol lamp burning a wick three-quarters of an inch in diameter; and the funnel is perforated by several openings below the level of the flame to afford air-current. Within the funnel, and just above the lamp, are two cross wires to support a cup holding six ounces of water; the cup having shoulders, so that when inserted between the wires and turned it will be supported above the flame by them. To use the apparatus, insert the extremity of the tube under the bedclothes, placing also a vertical strip of lath, or the like, a foot long near it, to make space for hot air, partially fill the cup with hot water, light the lamp, tuck the clothes close around the patient, and it is ready for operation.

In a recent case I witnessed its effect in the treatment of a patient suffering from general anasarca, where the accumulation was enormous, and the tension so great that the venous circulation of the skin was almost arrested, causing it to look black and crack open. There was pericardial effusion, and also œdema of the lungs so extensive that it seemed almost impossible for the patient to survive many hours.

In this case there was mitral insufficiency and an abundance of albumen in the urine, but no tube-casts; there seemed to be general glandular torpor, and she was given a prescription containing Donovan's solution, fl. ext. squills, and digitalis. Of course this was an aid to the treatment; but the abstraction of water through the skin by means of the apparatus did the most to relieve her I am very sure.

The cost of this instrument is slight, and any tinsmith can construct it. I consider it of great value as an adjunct in the treatment of many cases, and of sufficient importance to merit a notice in any medical publication.

F. W. PATTERSON, M.D.

MILWAUKEE, WISCONSIN.

EUCALYPTUS AS A TOPICAL AGENT.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—In your journal of May 15 I noticed a short article under the head of "Eucalyptus as a Topical Agent," and beg leave to give my knowledge of some of the uses of that valuable drug to your many readers. You say, "According to the few cases Dr. Williams has mentioned, together with the data already published on this subject in previous issues of the GAZETTE, one is encouraged to believe that it can often be used with advantage locally; that there can be obtained from it all the benefits that are to be had by the employment of the tincture of iodine, solutions of nitrate of silver, salts of iron, etc.; and that it can be made use of when these could not be in consequence of some objectionable features attending their application."

The consideration you have here given eucalyptus is true in every respect, according to my experience, as I have given it many a severe trial during the past three or four years, and I now use it almost altogether in place of tincture of iodine, nitrate of silver, etc., as a topical agent in all hyperæmic conditions of a local nature, no matter where. I combine a good fluid extract with an equal quantity of glycerin, which produces much more satisfactory results than the fluid extract alone, as in the latter form it dries too quickly and is somewhat irritating. To an ulcerated and enlarged tonsil, or inflamed throat, its curative action is very prompt and efficient. Of the above mixture, I apply, or direct to be applied, with the aid of a tongue-depressor and probang, a small quantity twice daily for two or three days, and then *pro re nata* until cured, directing the brush to be washed in alcohol or strong salt water, or it will become hard from the resin in the eucalyptus. As an application in metritis and endometritis, ulceration, or, in fact, any inflamed condition of the uterus, I use the following mixture with almost invariable success, viz.:

℞ Bismuth. subnit., ℥ss;
Morph. sulph., gr. xx;
Ex. eucalyptus, f℥ii;
Glycerin., ad ℥ii. M.

S.—Shake, and apply with absorbent cotton on a probe.

Upon its application to an inflamed part a sense of warmth is experienced, followed almost immediately by a feeling akin to the expression of "that feels *good*, and I believe it will help me."

Ten or fifteen drops of the fluid extract dropped in the water-chamber on an inhaler—something like Dr. Barber's—that generates vapor of muriate of ammonium, and used two or three times daily, is, speaking generally, good treatment in catarrhal affections of the head and throat.

W. B. KETCHUM, M.D.

PALO PINTO, TEXAS.

HYOSCYAMUS IN SINGULTUS.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—Having seen a good deal written on the different preparations of hyoscyamus and their effects on diseases, there is one condition or symptom for which I have never seen the remedy recommended, excepting in one instance where the tincture was used with several other ingredients. This condition is singultus in low forms of disease. About six years ago I was called in consultation in a case of an old gentleman in the last stage of pneumonia, in whom hiccough had set in, and was very frequent and extremely annoying. The attending physician had tried several remedies without success. I thought of hyoscyamus, and proposed it, which was agreed to, and I made several pills, giving them to the other physician. He gave one, and in a short time the hiccough stopped, and did not recur afterwards. He took only the one pill, and commenced improving, and recovered. Some time afterwards I had a case in which singultus occurred, and was extremely annoying. I thought of my first trial with the extract of hyoscyamus, and gave a pill, which was the last also, for the hiccough ceased, and I did not have to repeat the dose. The case recovered. Since then I never dread singultus in those low forms of disease of any kind. I have not tried any other preparation of hyoscyamus but the simple extract, that proving good enough so far. My aim in writing this is that others may test the advantages of this treatment.

Very respectfully, etc.,

J. A. CULLUM, M.D.

COTTONPORT, LA.

Notes and Queries.

THE TREATMENT OF IVY-POISONING.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—I would like to ask through the columns of the THERAPEUTIC GAZETTE for a remedy for the poison of the wild ivy. I have tried the usual remedies—sweet oil and acetate of lead—with very little success.

I shall be glad to hear from any of your subscribers. Respectfully,

L. B. PARSELL, M.D.

CLOSTER, N. Y.

[The editor of the *Journal of Cutaneous and Venereal Diseases* (June, 1886) has had a similar inquiry made to him, and, since his experience in the matter is so extensive, his views must be particularly reliable. We therefore print nearly in full, for the benefit of our correspondent, the advice which he gives on this subject.

Medical literature abounds in recipes which have been from time to time recommended as possessing specific virtues in the treatment of this distressing affection; but, however valuable they may have proven in isolated cases, their claims to infallibility have, unfortunately, not been confirmed when submitted to the test of extended clinical experience. It is well at the outset to recognize the fact that *there is no specific for the cure of dermatitis venenata.* It is to be treated on the same general principles as are indicated in the treatment of other inflammations of the skin directly provoked by external irritating agencies. The inflammation is self-limited, with a tendency to spontaneous recovery, and the principles of rational treatment are to relieve the subjective sensations of burning and itching, to modify the inflammatory action, and to prevent the extension of the eruption.

It is well known that the eruption first develops upon parts brought in direct contact with the leaves of the plant, or exposed to their emanations, as the hands and face. The poisonous principle of the rhus resides in a volatile acid termed *toxicodendric acid.* It is still a moot point whether the extension of the inflammation to other parts of the body is a systemic effect, consecutive to absorption of the poisonous principle, or whether it is due to a direct inoculation of the parts by the nails, as in scratching. The latter view is, Dr. Morrow thinks, the most probable; certainly, clinical experience conclusively proves the auto-inoculability of the eruption.

With a view of circumscribing the spread of the eruption, the patient should be cautioned against bringing the hands in contact with other parts of the body; especially should he be enjoined against handling the genital parts, as the integument of this region is peculiarly susceptible to the irritant action of the rhus. It is a matter of common observation that the genital parts of the male are much more frequently the seat of the eruption than the corresponding region in the female, and the explanation is found in the direct transfer of the irritating agent by the fingers in handling the parts during the act of micturition, in dressing, etc.

The treatment of the acute stage of the eruption should be essentially soothing and protective. For this purpose, dusting powders and sedative or mildly astringent lotions should be used.

A lotion which Dr. Morrow is in the habit of employing with good results is the following:

℞ Sodii hyposulphitis, ℥i;
Glycerinæ, ℥ss;
Aq., ad ℥viii. M.

Apply with compresses dipped in the solution and frequently renewed. He has also used a strong solution of the sulphite of sodium with marked benefit. Two years ago, he treated several cases by simply painting the affected surfaces, every two or three hours, with sweet spirits of nitre. It seemed to have a very favorable effect in relieving the cutaneous congestion, besides imparting, as one of the patients expressed it, a "cooling sensation" to the surface. In cases where the continuous application of a lotion is impracticable, freely dusting the surface with an absorbent powder is to be recommended. The following may also be used:

℞ Pulv. zinci oxidi, ʒii;
Pulv. bismuthi subnitratis, ʒi;
Pulv. amyli, ʒv. M.

It is important that the affected surface should be kept copiously covered with the powder; an occasional sprinkling does little good. If there is much burning heat present, a little powdered camphor (ʒss to the ʒi) may be added.

When the more acute eruptive features have begun to subside, a mild, soothing ointment should be employed. For this purpose there is nothing better or more universally applicable than the ordinary benzoated zinc ointment. Another very excellent dressing in this stage of the disease is the Lassar paste:

℞ Pulv. zinci ox.,
Pulv. amyli, aa ʒii;
Vaselini, ʒiv. M.

It is not claimed that the plan of treatment outlined above is in any sense specific. The writer has employed it, modified, of course, to meet indications in particular cases, in a large number of cases, with the effect of relieving distressing symptoms, and materially hasten-

ing recovery. The good effects of the same treatment will be found to vary in different patients. There is a great difference in the susceptibility of different individuals to the irritant action of the rhus poison, and the difference in susceptibility is perhaps equally marked in relation to the influence of medication.

Two cases of rhus-poisoning came under Dr. Morrow's observation last summer, both members of the same family; in both, the initial features of the eruption were equally severe, both were submitted to the same treatment; in one case it was promptly effectual, in the other the inflammatory symptoms continued, with scarcely any abatement, for several days.

Should the editor's treatment not fulfil the conditions demanded by our correspondent, he need not be discouraged, especially if he believes that in a multitude of remedies there is safety. It is not possible to here enumerate the entire list of remedles which have been recommended in the treatment of rhus-poisoning, for their name is legion. To give only a few which are claimed to possess a remarkable efficacy in subduing the symptoms: lime-water; alum curd; a saturated solution of bicarbonate of sodium; a strong solution of chlorate of potassium; a solution of sulphate of zinc (ʒss to the pint); a solution of carbolic acid (gr. ii to iv to the ʒi); a weak solution of sulphate of copper; dilute lead-water, etc. Compresses to be wet with these lotions, and applied every hour or two through the day. Dr. White, of Boston, and others, highly praise the efficacy of the ordinary black wash. Dr. Brown, U.S.N., claims that bromine (10 to 20 drops to the ounce of olive-oil or cosmoline) is a specific.

To turn now to the vegetable materia medica: a decoction of white-oak bark; a decoction of the bark or leaves of the elder; an infusion of the sweet fern; the tincture or fluid extract of serpentaria, lobelia, sanguinaria; infusion of the bark of the red sassafras, with sassafras tea, *ad libitum*, internally, have all been highly spoken of. Probably the most efficient of the vegetable remedies is the grindelia robusta, which may be used in the form of the fluid extract, diluted in ten to thirty parts of water.

Dr. Hyde speaks enthusiastically of an ointment made by incorporating a decoction of the inner bark of the American spice-bush (benzoin odoriferus) with cold cream. Dr. Edson highly extols the virtues of gelsemium in the treatment of rhus-poisoning (*Medical Record*, vol. xxii. p. 120). His formula is:

℞ Acidi carbolici, ʒss;
Fl. ext. gelsemii, ʒii;
Glycerini, ʒss;
Aq., ad ʒiv. M.

Cloths to be moistened with this lotion and applied to the affected parts.

This, he claims, with the internal administration of the fluid extract of gelsemium every three hours, effectually relieves the burning and itching, and the eruption speedily disappears.]

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—Will you kindly give your opinion in your Notes and Queries, what would be the effect upon the system of the excessive use of butter on bread, say spreading bread at least a quarter of an inch thick with it? I think that doctors disagree on this subject, while I have heard some say that such a habit was not good for the system. I know of one case where the doctor actually requested one of his patients to use it spread on very thickly.

Yours, etc.,
READER.

MAINE, June 22, 1886.

[Every one remembers the famous fable of the satyr who indignantly turned out into the storm the belated traveller because he blew his hands to warm them and his porridge to cool it. This act illustrates very well the subject of our correspondent's letter. The doctor who denied butter to his patient and the doctor who ordered butter for his patient were each probably right. Butter is a fat, and in all scrofulous patients the more fat that can be digested the better. If, however, the digestion of the patient be feeble, withholding of fats may be essential. Further, if a patient have a tendency to obesity, or to fatty degeneration of one of the internal organs, abstinence from the use of butter and other fats might be a necessary part of the treatment. As a fat which is easily digested, good butter is an important remedial agent, one which we think ought to be more used than it is, but the question of its administration or its withholding is one to be settled by the judgment of the practitioner for the individual case. Rancid butter is always bad.—EDS.]

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its fourth annual meeting at St. Louis, Mo., on the 6th of October next.

SOME USES OF THE TIN OLEATE.

To the Editors of the THERAPEUTIC GAZETTE:

GENTLEMEN:—I used the tin oleate some months ago on my finger-nails, which commenced to split and break soon after I left the army, the result of scurvy, contracted in the military service. I anointed the nails every day with the oleate, and at night applied it on a narrow flannel bandage. In about two months all the nails were *sound* and *tough*. I applied the oleate to the nails of a young lady friend with like success. It is also a beautiful polish for the nails.

Respectfully,

THOS. H. IRQUHART.

HASTINGS, NEB.

TARTAR.

The situations upon which deposits of tartar are found upon the teeth are, in order of frequency, the lingual aspect of the inferior incisors,—that is, opposite the openings of the ducts of the submaxillary and sublingual glands, the buccal surfaces of the upper molars which face the orifices of Steno's duct, next the buccal surface of the lower molars, and sometimes the lingual surface of the molars of both jaws. The deposit is never found upon the lingual aspect of the upper incisors, which are not bathed with saliva, and, moreover, are constantly being swept by the tongue. It is capable of being formed in great abundance, especially when from any cause, such as a carious tooth, one side of the mouth only is used for mastication. Tartar is composed chiefly of earthy phosphates and carbonates, with which is mingled a certain proportion of organic matter, epithelial scales, fatty particles, filiform fungi, vibrios, and monas. The relative proportion of phosphates or carbonates varies very considerably in different analyses, and this is due to the material being taken from different parts of the mouth. Thus, if from the buccal surface of an upper molar, it will be richest in carbonates, like the parotid saliva; whereas, when taken from the back of the lower incisors, it contains an excess of phosphates. Tartar is simply a deposition by precipitation of the salts held in solution in the saliva, which is brought about by its contact with air or mucus. The quantity of tartar varies largely in different subjects, for some salivas contain a small proportion of salts, and therefore the deposit is small; also if the precipitate meets with an acid—such as is so frequently found round the necks of the teeth and due to fermentation—sufficient to neutralize it, it will be redissolved. Thus the presence or absence of tartar has a clinical significance. If it is very abundant, it indicates an alkaline reaction both of the saliva and of the parts around the teeth, and a consequent immunity from caries; but if allowed to accumulate, it produces gingivitis by simple traumatic irritation. In some very rare cases it is entirely absent, owing to an acid reaction in the mouth, which leads to the most disastrous ravages upon the teeth. Between these two extremes there is every mean. The gingivitis due to tartar varies according to the quantity deposited; in a mild case there will be merely a line of redness along the free border of the gum; in a more severe case the roots of the teeth will be stripped of gum and its place taken by tartar; the gum will be festooned, have a fungating appearance, and bleed at the slightest touch; the teeth will loosen and change their position, owing to the inflammation having extended to the alveolo-dental membrane and the absorption of the alveolus. The treatment consists essentially in a vigorous use of the tooth-brush and the periodical removal of the incrustation. Any tooth-powder or preparation which will remove it must be acid, and therefore very deleterious to the teeth themselves. Mr. Bland Sutton has found accumulations of tartar upon the teeth of monkeys, kangaroos, and lemurs at the gardens of the Zoological Society, where it is an occasional cause of death from septic pneumonia. These deposits are almost invariably found in association with a carious tooth or necrosed bone. —*Lancet*, June 5, 1886.

TEREBENE.

Certain authorities on lung and throat disease have recently given prominence to terebene as a remedial agent in the winter cough of old people. It has also been found to be an efficient antiseptic, and has been used to some extent in surgery.

Clinically, it is a hydrocarbon, and to the chemist is of interest as an isomer of turpentine. The pharmacist, in the course of his duty, will have it to dispense, and therefore to a study of its chemical properties he must add a knowledge of its pharmaceutical adaptations.

Terebene is a clear, colorless liquid; has a faint thyme-like odor, and has no effect upon a ray of polarized light. This last characteristic distinguishes it positively from turpen-

tine, and the odor by some is described as resembling much that of fresh pine shavings.

According to MR. J. N. HURTY (*Pharmaceutical Record*, July 1, 1886) terebene can be easily and cheaply made by adding to any convenient quantity of turpentine oil five per centum of its weight of U. S. Pharmacopœial sulphuric acid. The acid must be added slowly, almost drop by drop, the turpentine being contained, preferably, in a glass flask, and must be kept very cool. If the mixture exhibits a tendency to grow so warm as to be uncomfortable to the hand, the addition of the acid must be suspended until the heat is subdued. After all the acid is added, it is best to transfer the mixture to a porcelain capsule, so as to expose thoroughly to the air, which exposure should continue for twelve or eighteen hours. This insures complete chemical change, and permits the subsidence of the tarry product, which immediately forms when the acid is added to the turpentine, and which is not wanted.

After standing for the specified time, the clear liquid is carefully decanted from the tarry substance, transferred to a glass retort, and distilled. The distillation can be effected without a condenser if a retort with a long beak be used, the end of which projects into a well-cooled receiver.

It is essential that a correct thermometer be inserted in the tubulure of the retort. Heat can be applied from an ordinary rose Bunsen burner, the retort being raised just high enough to prevent the flame from striking it. Sometimes it will be found necessary, in cold weather or if, perchance, a draft passes through the laboratory, to surround the gas-flame and retort-bulb with a short piece of stove-pipe, which serves to conserve the heat which otherwise would be dissipated.

Some few drops of distillate will appear at about 130° C. At 150° C. the distillation will proceed freely, the thermometer gradually rising until 160° is reached, where it will stand quite steadily until all of the compounds composing the substance we call terebene have passed over. At the first intimation of a rise beyond 160° C., the distillation must be controlled by either lowering the heat or, if the distillate has slackened, discontinuing the operation. The products of this reaction, distilling above 160°, are not wanted for medicinal purposes.

The distillate will be more or less milky, owing to the small quantity of water formed in the reaction, which distils over; and, moreover, will be acid because of a little sulphurous acid. Both of these products can be removed by agitating with a small quantity of freshly-ignited potassium carbonate. Separation of the terebene from the compounds formed is slow, but in a few hours is complete. The imperfect terebene thus obtained must be treated with sulphuric acid exactly as heretofore detailed, then distilled and purified. Indeed, these processes must be repeated until the terebene answers to the following requirements: Clear and colorless, thyme-like odor, boiling at 160° C., specific gravity .860, .862 at 15° C., optically inactive, mutual in reaction.

This product—allene—is resolvable by repeated fractional distillations into terebene $C_{10}H_{16}$, boiling at 150°; cymene $C_{10}H_{14}$, boiling at 175°. The substance left in the retort is principally colophene $C_{20}H_{32}$, boiling at 318°.

When it is stated that terebene is an isomer with turpentine, it is meant that they have the same formula, which is $C_{10}H_{16}$. The word isomer is from two Greek words, the first meaning equal and the second part. Hence, isomer, of equal part or measure.

Pharmacy of Terebene.—Medical authority has fixed the dose of terebene at from 5 to 20 drops, and it is prescribed to be given as a vapor, and also to be exhibited in inhaling apparatus. As much stress is placed upon its topical effect, no pharmaceutical form for administration would be admissible that would interfere with this desired end. Two reasons then exist for excluding the pill form. First, the dose is too large to admit of making pills from it of convenient size, even 5 drops requiring an astonishing quantity of absorptive substance—powdered marshmallow, liquorice-root, elm, and tragacanth, etc.—to take it up. Second, the pill form would prevent, obviously, all local effect.

The lozenge form suggests itself as applicable, and likely to meet all requirements. A lozenge, however, to contain a maximum dose of terebene, 20 drops, must be very large if made simply like the U. S. Pharmacopœial peppermint lozenges. To contain even 5 drops, a lozenge twice the size of those just mentioned is required. This difficulty is caused by the non-absorptive qualities of terebene, it seeming to have no affinity of contact with any pill or lozenge-forming substances. This repellant quality, so far as making into lozenges is concerned, can be overcome by making a heavy emulsion of the terebene, and thus introducing it into the mixture of sugar and powdered tragacanth.

The following formula works perfectly, giving a lozenge of good size, holding the terebene satisfactorily, and possessing a taste far from unpleasant. Take of—

Terebene, ʒiiiss;
Acacia, ʒiii;
Water, ℥ii;
Powdered sugar, ℥vi;
Powdered tragacanth, ℥ii.
Make 100 lozenges.

With the terebene, acacia, and water make, according to article, an emulsion, which add to the powdered sugar and tragacanth, previously mixed together. Beat into a mass, and make into lozenges. The emulsion form, for administration, meets every requirement save one.

The taste of terebene is pretty generally considered bad, and in emulsion its peculiar pungency most successfully salutes and thrusts itself upon the gustatory nerve. Pharmaceutically, however, the emulsion is a success, the following proportions, if observed, furnishing as fine a representative of that class as can be desired :

Terebene, ʒiv;
Powdered acacia, ʒiii;
Water, to make ℥ii;
Syrup of ginger, ℥i.

First rub thoroughly together the acacia and terebene in a dry mortar, add all at once the water, rubbing rapidly until the crackling sound appears, then add the remaining water and the syrup of ginger. This emulsion is not perfectly white, owing to the syrup of ginger, which is added preferably to simple syrup because of its flavor and pungency, which somewhat mitigate the taste of the terebene.

Oil of peppermint might be added to this emulsion with the effect of almost entirely covering up the terebene taste, but unfortunately there are many who dislike peppermint intensely, and hence it cannot be generally used. Oil of lemon improves this emulsion little, if at all, and hence cannot be recommended.

AUSCULTATION OF THE EYEBALL.

M. Gené has recently described to the Biological Society of Paris a new method of estimating the tension of the eyeball. This consists in auscultating the organ by means of M. d'Arsonval's telephone. The instrument is applied to the globe, and a sound, such as that of the interrupter of a faradization instrument, made to pass : the differences of degree and intensity of the sound, as perceived by the observer, afford a valuable and accurate means of diagnosis. M. Gené's experiments being as yet somewhat incomplete, he hopes at some future time to lay the subject before the society in greater detail.—*Lancet*, June 5, 1886.

RHEUMATISM, GOUT, AND DIABETES.

The Croonian Lectures of the present year are mainly remarkable for the assiduity with which Dr. Latham has attempted to introduce into general medicine an intricate, though necessary, knowledge of some of the intimate chemical processes which are collectively classified under the physiologist's term of metabolism. Were we able to picture accurately the various stages of the chemical processes occurring in the normal integration and disintegration of protoplasm, we should be possessed of knowledge which it is no exaggeration to say would speedily place within our grasp the secrets of nature. As an attempt to propound some of the most important vital chemical changes, every member of the profession must fully appreciate Dr. Latham's labors. But in the present state of physiological science his arguments can only be considered as more or less probably correct. Our information of the way in which a molecule of protoplasm or even albumen is built up is so vague and uncertain, that we have no solid groundwork whereon to build a superstructure. If, then, physiology is so unsettled, pathology must for all purposes be likewise indefinite. At the outset Dr. Latham appeals in large measure in support of his views to an ingenious analogy—first made, we believe, by Pflüger—between the properties of certain cyanogen compounds and those of living protoplasm. This analogy is very striking, and even if it does not actually represent the truth, it probably gives some idea of the difference between living and dead matter. It is a question of a difference in power, in potentiality. The chemical composition, the mere number of chemical atoms, is the same in urea and ammonium cyanate. Urea, however, represents dead matter, more stable but less energetic than ammonium cyanate, which is the representative of living matter in that it possesses energy with instability. Dr. Latham suggests that albumens are structurally cyan-alcohols combined with a benzene nucleus. The energy of albumens comes from their being cyanogen compounds. He shows how the various amide products of the animal

economy may be built up in the laboratory by various chemical interchanges.

What is rheumatic fever? Clinically it consists in the development of various well-known symptoms. How may these symptoms be excited? We have for many years past been taught to believe that causes acting on the central or peripheral nervous system may give rise to joint changes having a close resemblance to those of subacute rheumatism. Is rheumatism a disease of the nervous system? The experiments of Dr. B. Foster have shown that the introduction of lactic acid into the animal economy may be followed by the production of a certain set of symptoms closely allied in appearance to those of rheumatic fever. Does the lactic acid act on the joint structures and vessels directly or through the intermediation of the nervous system? Dr. Latham adopts neither of these views. The Croonian lecturer believes that the *materies morbi* of rheumatism may induce the arthritic signs by its action on the trophic centres presiding over the nutrition of the joints. Lactic acid is formed in excess, but must be regarded as a companion symptom with the other phenomena of rheumatic fever. Not that the acid itself is harmless; possibly it also induces symptoms on its own account. Dr. Latham fixes on uric acid as the irritant to the central nervous system in rheumatic fever. Where and how is the excess of uric acid formed? In order to follow this problem it is necessary to know that there are such bodies as amido-acids. One of these of most importance in our present connection is amido-acetic acid, glycocoll, or glycocine. This acid enters into the formation of many important substances. By heating it and urea together, uric acid can be obtained. Glycocine may be formed in excessive quantities in muscular tissue; combined with cholic acid it forms a salt of bile. The liver, therefore, secretes it thus in combination. Now, there are several other ammonia compounds,—leucine, tyrosine, and taurin,—all of which are probably dealt with by the liver, which most likely converts them into urea. The capacity of the liver in this respect may vary for different ammonia compounds. Imagine that the glycocine is not transformed, or only partially so, whilst the other bodies are acted upon, then we should have urea and glycocine together; a conjunction not difficult to imagine, and which possibly actually occurs with the formation of uric acid. But there is the difficulty; such processes are possible, but have not been proved to occur. On this view the liver is the great offender; on it the "sluggish" liver of our forefathers receives a new interpretation. There are many ways, however, in which the imperfect metabolism of glycocine may be brought about. Take an ordinary febrile catarrh, in which we may suppose that there is an excessive production of amido-acetic acid (glycocine) in the muscles. It goes to the various glands of the body,—liver, spleen, kidneys. Some of it gets converted into urea, and we hear no more of it. Other portions combine with urea to form uric acid, with more or less disturbance of the nervous system, according as the eliminatory organs are in good working order or not.

The vaso-motor system figures largely in Dr. Latham's attempts to explain feverish colds, rheumatism, etc. The vaso-motor system, as has been said of statistics, can be made to prove anything; any physiologist will grant such a proposition. The lecturer pointed out that muscles and glands have special secretory and vasal nerves; urari paralyzes the former in muscle and atropine in gland. The vessels may be dilated without increasing the secretion or metabolism, but still, as a rule, vaso-dilatation means excessive disintegration or descending metabolism. Taking this as a guide, we can easily follow Dr. Latham through the varying effects of exhaustion, paralysis, and stimulation of the various parts, cutaneous, muscular, and glandular, of the vaso-motor system. In rheumatism the (what Dr. Moxon would call) "Secretary of State for the Vaso-motor Department" is in a condition of exhaustion; it has loosened its reins of government; the local departments therefore run riot; or, in other words, there is excessive disintegration and vascular dilatation; the consequences as regards glycocine and the like we have above considered; at the same time lactic acid is formed in excess. In rheumatism, therefore, we cannot blame the liver; it does its ordinary share of work, but too much is put upon it, hence the uric acid and morbid irritation of the nervous system. But in gout it is another matter; the liver is primarily at fault; its secretory cells are not acting up to normal either from defective innervation or inherent weakness. It is possible that glycocine and urea may be conjugated by the renal tissue, and thus lead to the formation of the slightly soluble ammonium urate, some of which may pass away into the general circulation and be transformed into the sodium salt which is deposited in the joints of gouty subjects.

The far-reaching nature of Dr. Latham's subject is still further witnessed by its inclusion of the kidneys, as well as the liver, nervous system, spleen, and general physiological chemistry. A good deal depends on the kidneys: if they are sound the uric acid is readily eliminated; if not, if there be renal inadequacy, then more of the *materies morbi* circulates widely, and so induces the arthritic and other symptoms of gout and rheumatism. It is easy to picture the action of the poison in the blood on the *locus minoris resistentiæ* of various individuals, or the same individual at different times, with the production of gout at the heart, at the toe, at the stomach, and so forth. The arguments in support of Dr. Latham's views afforded by appropriate treatment of rheumatism, gout, and diabetes, by salicylic and benzoic acids and colchicum, are not the least interesting part of the Croonian Lectures.—*Lancet*, May 15, 1886.

THE DETECTION OF ALBUMEN IN URINE.

The clinical importance of albuminuria, and the necessity that exists for its early detection as a guide to the treatment of the morbid conditions which give rise to it, have led to the introduction of numerous methods directed to a demonstration of its presence. For a long time the main reliance of physicians in this connection was placed on nitric acid, but of late years other tests than this have been suggested by different observers, until at length quite a goodly number of reagents have been included under the head of albumen detectors. The Clinical Society of London, appreciating the desirability of arriving at some sort of authoritative decision on the comparative value of the methods now in use, recently appointed a committee to examine into and report upon the subject; and on Friday last Dr. W. M. Ord communicated the results of this committee's labors, which were devoted to consideration of the eight following methods of performing the examination of fluids for albumen, viz.: 1. Dr. Oliver's test papers; 2. Dr. Pavy's pellets of citric acid and ferrocyanide of potassium; 3. Dr. Johnson's picric acid test; 4. Sir William Roberts's acid brine test; 5. The picric acid brine test, being a solution of picric acid saturated with common salt; 6. The potassio-mercuric iodide in solution with citric acid; 7. Nitric acid; 8. Acetic acid and heat.

The test papers invented by Dr. Oliver were all carefully experimented with, and in respect to those saturated with the potassio-mercuric iodide, the committee report that the most satisfactory results were obtained as regards refinement and delicacy of reaction, they being superior in these respects to nitric acid in whatever manner the latter may be employed. Next in order of comparative value they place the ferrocyanide papers; the tungstate papers third; and of the picric acid papers they speak unfavorably, urging that the amount of the acid required for the purposes of detecting albumen is greater than can be supplied by the papers, unless they be used in inconvenient bulk. Even the potassio-mercuric iodide papers, however, possess the drawback that when employed in the cold they require to be supplemented with citric acid, the same objection also applying to the ferrocyanide slips. But it is pointed out that excess of soluble urates in the examined urine gives rise to a precipitate in the presence of citric acid alone, and this fact necessarily introduces a fallacy which it is important to bear in mind in all cases where the papers in question are used for the testing of cold urine; dilution of the excretion is recommended as a means of avoiding the error, as well as the employment of sufficient citric acid to insure a distinctly acid reaction of the fluid. Of the potassio-mercuric iodide it is added, that it appears to precipitate all albuminous bodies, while the ferrocyanide test does not react with artificial peptones. At a later stage of the report, unqualified praise is given to the mode of testing by *solution* of potassio-mercuric iodide, with addition of acetic acid. This is described as the most delicate of all the plans considered, possessing superiority over Dr. Oliver's papers, and giving, especially when applied after Heller's method, reactions of the utmost possible refinement. Dr. Pavy's ferrocyanide of potassium and citric acid pellets are also favorably spoken of, but the same precautions must be observed with them as have been already mentioned, to guard against fallacies due to the precipitation of soluble urates by the citric acid. Further, care must be taken that a temperature exceeding blood-heat is not reached by the urine during their employment: otherwise the ferrocyanide undergoes decomposition.

The picric acid solution suggested by Dr. Johnson is described as being, when used with the addition of citric or acetic acid, or when excess of the picric acid itself is employed, second only to the solution of potassio-mercuric iodide in its reactions. Owing

to the great diffusibility of the reagent, the committee consider its employment after Heller's method inapplicable,—*i.e.*, by floating it upon the urine to be tested; and to overcome the difficulty in this connection they devised a special method of experimenting, which is fully described in the report; and they recommend the addition of strong brine to the picric acid to increase its specific gravity in this connection. They further point out that the urine of persons who are taking quinine yields a precipitate with the acid; it disappears on boiling, but is again thrown down in the cold as a crystalline powder, which, with chlorine water, gives the characteristic reaction of quinine. Uric acid also is precipitated by picric acid, but the effect of heat in dissolving the cloud sufficiently insures its recognition.

The old nitric acid test is, after all, still regarded as affording results the most trustworthy, and as being liable to fewer fallacies than any other of the methods considered. The difficulty surrounding its use is one mainly of convenience, the want of portability being the one objection to its general acceptance in practice. On this ground, and this alone, can other methods claim superiority. The committee also mention acetic acid in terms of high praise, especially as a means of detecting small quantities of albumen, and speak of it as being, in common with nitric acid, particularly free from fallacies such as necessitate especial caution in the use of other tests in the list; but while thus describing the accuracy of these older modes of examination, they add that they have found an apparently albuminous precipitate formed in some urines after treatment with potassio-mercuric iodide, which yielded no reaction with nitric acid.

All the methods included in the report receive commendation on special grounds, each being considered to possess advantages peculiar to itself, under certain circumstances; and the committee declare their conviction that any one who constantly employs either of the tests mentioned will be readily able to decide on the presence or absence of albumen with sufficient accuracy for all clinical purposes. For distinguishing the various forms of proteids they regard the possession of several tests as invaluable, while the additional advantage pertains to Dr. Johnson's picric acid test that it affords evidence of the presence of sugar also, when employed with the addition of caustic potash and boiling. We cannot but think this report will prove a most valuable contribution to the study of clinical methods, and do much to stimulate renewed inquiry in a direction that will lead to ultimate practical benefit.—*Medical Press*, June 2, 1886.

TESTS FOR LANOLIN.

The following tests for lanolin are recommended by Messrs. Jaffé and Darmstaedter (*Schweiz. Wochenschrift*, p. 88, 1886):

1. Red litmus-paper should not turn blue placed over a flask in which two or three grains of lanolin are heated with 10 c.c. of a thirty per cent. solution of caustic soda. Lanolin should be free from ammonia.

2. Pure lanolin, heated in a capsule with five times its weight of distilled water, when melted, floats to the surface, and remains clear on cooling, whereas impure lanolin becomes spongy.

3. No glycerin should be present in the water in which lanolin has been treated upon being evaporated.

4. When kneaded with water, with exclusion of air, it should take up more than its own weight of water without becoming soapy to the touch, and when triturated in a mortar it should not slip off the pestle or spatula.—*Western Druggist*, June, 1886.

DETECTION OF ALUM IN BREAD.

The detection of alum in bread is accomplished as follows: A piece of gelatin (free from alum) is immersed in a cold infusion of the suspected bread for twenty-four hours. The gelatin, upon being washed off with distilled water to which has been added a little of a ten per cent. solution of logwood tincture and ammonium carbonate, should not show a blue coloration if the bread is free from alum. —*Western Druggist*, June, 1886.

THE HAIR-ROOTS AS INDICATORS OF BODILY OR MENTAL DISEASE.

Dr. J. Pohl-Pincus, of Berlin, has recently, in a *brochure* entitled "Polarized Light as a means of Recognizing Irritable Conditions of the Nerves of the Scalp," announced that by an examination of the hair-roots by polarized light peculiar changes may be observed whenever the patient suffers from physical irritation or mental excitement. This statement is the result of investigations which have now been going on for twenty-five years, and the later observations in the course of the research have uniformly confirmed those made earlier.

The hair-bulbs are divided into three groups, as follows: Group A: If, in healthy conditions of the body and mind, the hairs that fall out daily are examined microscopically by polarized light, the enlarged bulbous end of the root will show a white contour, and a yellowish or brownish-red centre. Group B: In all irritable conditions of moderate grade, all painful conditions of any organ, also in emotional disturbances of moderate grade, without any apparent bodily disease, the bulbous end of the hair-root increases in length and breadth (in proportion to the irritation), the central part appears under polarized light of a violet, blue, or bluish-green color, separated from the white contour by bands of yellow and red. Group C: In higher grades of bodily disease or mental disturbance, the bulb becomes still larger, and the bluish centre changes to green, yellow, or orange. A few hairs of the B and C types are found in normal conditions, especially in those more advanced in life. Dr. Pincus gives thirty-one cases showing the effects of painful disease, but more especially of depressing emotions, upon the appearance of the hair-root. The conclusion to be derived from these researches is that bodily disease or mental excitement causes circulatory disturbances, and in consequence a change in the normal nutrition and pigmentation of the hair. This is only in accordance with previous observation, and the chief merit of Dr. Pincus's plan lies in his obtaining a means by which very slight and temporary changes in tissue-growth can be detected and approximately measured.—*Lancet*, May 1, 1886.

A SUBSTITUTE FOR COCA-LEAVES.

According to the *Chemist and Druggist* (May 29, 1886) dodonæa-leaves have been sent into England as a substitute for coca-leaves, the consignor being under the belief that they possess similar properties. Though their conformation presents a remote resemblance to that of the coca-leaf, the varnished surface and the liquorice taste should remove any doubt on this point, and, moreover, the absence of the lateral mark along each side of the midrib, which is so characteristic of coca, together with the mucronate apex, will not mislead the close observer to suppose that they are coca-leaves. Moreover, the leaves, though containing abundance of extractive and mucilaginous matter and a little tannin, do not contain an alkaloid; they probably contain a glucoside, but the quantity of the leaves under examination was too small to afford satisfactory proof of the indications in this direction.

A correspondent further states that there are three dodonæa plants growing in the Edinburgh Botanic Gardens. One of these came from the tropics, and the others are supposed to have come from New Zealand. The fresh specimen of these shows a longer and narrower leaf than those which are the subject of this note.

POISONING BY CHLOROFORM.

The symptoms and post-mortem appearances of poisoning by liquid chloroform were—and apparently still are—but little known, and the evidence given on the subject during the past week has been marked by much unavoidable hesitation and uncertainty. Not only did the want of exact knowledge on the one hand hamper the scientific witnesses, especially those who, in courts of justice, were not altogether at home, but the information that is possessed as to the toxic effects of the drug only goes to show how unreliable a poison it is, and how variable are its effects. One result, at any rate, of the recent trial will have been to call attention to the facility with which drugs can be obtained, the use of which under any circumstances must be illegitimate on the part of any other than a medical man. The utter inadequacy of the law on the subject of the sale of poisons is unfortunately a matter of public notoriety, but the ease with which such potent agents as chloroform are shown to be procurable is nevertheless rather startling. Now that the uses and mode of employment of this drug have become public property, it may not unreasonably be anticipated that the future will furnish further details to supply the present *lapsus* in medico-legal treatises. The difficulty with which its employment could be brought home to the culprit if inhalation only were resorted to cannot but enhance its reputation; and unless special precautions be taken, there may be quite a "run" on this particular lethal weapon, as well for offensive as for defensive purposes. Protection can only really be afforded by an absolute prohibition of the sale of such drugs by druggists, under a penal clause, except to medical men or their recognized representatives. To be effectual the onus must be made to rest to a large extent on the vendor, even where his poverty and not his will consents. At present a few "informal formalities" suffice to cover his responsibility, and he is at liberty to go cheerfully and give his evidence

in a case which would in all probability never have presented itself if the law did not almost connive at his carelessness. There are few quite unmixed evils, and it may be that the late *cause celèbre*, besides affording gratuitous and poignant amusement to a crowd of "women and young girls," may serve to point a moral as well as to adorn a tale, by stimulating the progress of a much-needed reform in the laws anent the sale of poisons.—*Medical Press*, April 21, 1886.

EQUIVALENT WEIGHTS.

The following rather good story is related in the *Petit Moniteur de Médecine* for April, 1886:

A doctor, practising in the country, brought a package of powder in bulk to a woman, of which she was to give to her husband 75 grains daily. As she said that she had a pair of scales, but no weights, the physician told her that a one-franc piece (a quarter of a dollar) weighed about the amount which he wished to have given, and that she might therefore give him daily the weight of a franc piece of the powder. Two days afterwards the doctor, to his great astonishment, found his patient dead. The explanation of this mystery was, however, readily reached. It turned out that the woman had no silver piece, and that she thought the equivalent in money, no matter how arranged, would be the proper dose; she therefore, instead of putting the silver coin in the balance, put in twenty-five copper pennies. The result was evident.

PHYSIOLOGICAL EFFECTS OF MASSAGE.

Dr. F. Gopadze has published a series of observations undertaken with a view to determine the effect of massage on the transformation of the nitrogenous principles of food. He has investigated the history of the subject, and finds traces of it in a Chinese work 3000 B.C. Dr. Gopadze finds that, though there has been a general tendency among authors to assume that massage increases the assimilative power, no exact observations on the subject have hitherto been published. He therefore obtained the co-operation of four medical students, who for three consecutive weeks became inmates of Professor Manassein's clinic, and lived on certain articles of food,—bread, milk, soup, veal, and roast beef,—the quantities ingested being accurately noted. The nitrogen in all the samples of food, and in the fæces and urine excreted, was determined by the Kjeldahl-Borodin process. Massage was practised for from twenty to twenty-five minutes once a day two or three hours after food. The operations were commenced by *effleurage*, beginning from the extremities and working towards the centre. This was followed by *massage à friction, pêtrissage, tapotement*, a second *effleurage* of each part concluding the whole. The temperature was subsequently taken, and in some cases sphygmographic tracings. In all four cases the appetite was decidedly increased, not only during the week in which massage had been practised, but after it had been stopped; thus, one of the subjects took an average daily quantity of 24.95 grammes of nitrogen during the first week, 30.97 during the second or week of massage, and 29.57 during the third week. Similarly the amount of nitrogenous transformation was augmented during the continuance of massage in all four cases. The augmentation persisted in two of the cases, but in the other two the transformation was less during the third than during the first week. In Case 1 the nitrogenous transformation was increased three per cent. during the second week, and one per cent. during the third. In Case 2 it was increased one per cent. during the second week, but diminished eleven per cent. during the third. In Case 3 it was increased three per cent. during the second week, but diminished ten per cent. during the third. In Case 4 it was increased four per cent. in the second week, and three per cent. in the third. The quantity of nitrogen assimilated increased in all four cases, independently of the amount of food ingested. During massage two of the subjects gained slightly in weight, the other two losing weight, but during the week following the one in which massage was practised all four gained. The axillary temperature decreased for about half an hour after the operation to an extent varying from 0.1° to 0.5° C., after which it began to rise, attaining its original figure, or from 0.1° to 0.3° below it, about an hour after the end of the *séance*. The respirations became more frequent, and were of a deeper character. The effect on the pulse varied with the character of the massage. When this was carried on lightly, the pulse became more frequent; but when the manipulation was more forcible, the pulse became slower. The effects in both cases persisted for an hour or more after the termination of the operation. In conclusion, the author suggests that massage should prove useful in chronic gastro-intestinal catarrh, in

chronic constipation due to an atonic condition of the intestines, also in various cases where there is a lack of tone in the abdominal muscles. He also thinks that the practice of massage should be a subject of instruction not only in the Military Medical Academy of St. Petersburg, but in all the medical faculties of the empire and in the institutions for training "feldshers,"—a semi-educated class of men who act as hospital sergeants, and after retiring from the army are put in charge of village communities where there is no medical man.—*Lancet*, May 22, 1886.

DIGESTIVE FERMENTS.

An interesting contribution on the value of extract of malt in wasting diseases, by DR. MURRELL, has recently appeared. The value of this preparation appears to be satisfactorily established, but he attaches a very great importance to testing the specimens of extract of malt before employing them. Otherwise disappointment may follow the administration of an extract which has not been prepared by suitable means, or with proper care, and which, in consequence, is more or less wanting in the active constituents to which alone extracts of malt owe their efficacy. Dr. Murrell calls attention to the fact that it is desirable to be careful to make all experiments with the same sort of starch, for he found in the course of his observations that starches from different sources varied widely in their susceptibility to the action of malt ferments; hence, unless due care be taken to secure an uniform quality in the starch experimented with, erroneous and unreliable results may be obtained. The best variety for comparative tests, according to Dr. Murrell, is pure Maranta arrowroot, ten grammes of which should be weighed out and mixed with a little cold water. This should then be stirred in ten ounces of boiling water over a gas-burner, and when the mixing is complete, the whole should be cooled down to 40° C., at which temperature it should be maintained during the experiments. This latter point must be rigidly attended to, as a difference of one or two degrees materially influences the result. Then again, in testing for the presence of starch with iodine the solution in the test-tube must be cold, as otherwise the characteristic blue reaction will not be produced. Out of eleven specimens of extract of malt so examined, only two were found to transform all the starch within thirty minutes, while several were absolutely destitute of any diastatic action whatever. Good preparations do not deteriorate on being kept, but the inferior article is apt to undergo fermentative changes. With this simple and easy method of estimating the value of any given extract of malt, the practitioner is enabled to prescribe it with confidence and the discredit which would result to this class of preparation from the employment of inert extracts may be avoided.—*Medical Press*, April 21, 1886.

MAGNESIUM SULPHATE IN RHEUMATISM.

DR. S. B. CHASE calls attention in the *Iowa State Reporter*, April, 1886, to the fact that magnesium sulphate will frequently produce great relief in the treatment of muscular rheumatism. He recommends its being given in doses of 5 to 10 grains three times a day in cold water immediately after eating. In his own case it succeeded in producing an entire relief of pain, after various other remedies had failed.

A SIMPLE REMEDY FOR CHRONIC DIARRHŒA.

DR. T. C. SMITH, writing in the *Med. and Surg. Reporter*, June 12, 1886, mentions the fact of his having cured a case of chronic diarrhœa, which had lasted for nearly forty years, by the administration of a saturated solution of salt and cider vinegar, a drachm being taken three or four times a day. He also states that since the first instance where he recommended this homely remedy without supposing that it would actually do any good, he has employed it several times in more or less severe cases of chronic diarrhœa, in which it produced great improvement, and, in some cases, cure. Where relapses followed the suspension of the remedy, its renewed administration was again followed by improvement.

DIALYZING DIAPHRAGMS.

A practical subject of much importance in the chemical laboratory is that of the relative permeability of various diaphragms, and the paper by HERR ZOTT in the *Annalen der Phys. und Chem.* will be therefore appreciated. Goldbeater's skin carries off the most useful, homogeneous, and water-tight material as a dialyzer, and is twice as effectual under the same conditions as parchment-paper, which, on the authority of Graham, has hitherto been regarded as the best substance. When the solutions to be dialyzed are of such a nature

as to attack organic membranes, ordinary clay cells must be still employed, though they are sixty times less effectual than goldbeater's skin. It appears also that the rapidity of diffusion is increased by the complete exhaustion of the air contained within the pores of the dialyzer; the rapidity is also dependent more on the increase of volume of the solution than on augmentation of the mass dissolved. After a preliminary exhaustion endosmosis takes place, even in the case of slowly diffusible substances such as colloids. The term "colloid" and "crystalloid" are purely relative; two or more substances present in a solution are more rapidly and completely separated the greater the difference of their diffusion velocity. Separation by dialysis is more rapid the more often the liquid in the outer vessel is removed.—*Lancet*, May 22, 1886.

SAL ALEMBROTH—SIR JOSEPH LISTER'S LATEST ANTISEPTIC.

It may be news to a great many to learn that LISTER has discarded the use of the spray almost entirely, the only cases he has used it in during the past fifteen months being operations involving the peritoneum. After careful examination and study, he believes that the germicide properties in a solution of $\frac{1}{40}$ carbolic, thrown by the spray into the air three or four feet, to be *nil*, or nearly so, and the sole benefit derived was due to the irrigation and absolute cleanliness induced. Carbolic acid was superseded by perchloride of mercury; this, when used for dressing, was, from its forming an insoluble albuminate of mercury, irritating, and thus an unsatisfactory dressing. He now uses sal alembroth exclusively in his wards for dressings, and it has so far given very fine results. It is a double mercurial salt formed by the sublimation of a mixture of perchloride of mercury and chloride of ammonium, exceedingly soluble. The salt was known to the alchemists; it has not been used in medicine in modern times. Lister prepares all his dressing now with a $\frac{1}{100}$ solution of this, gauze cotton-wool, lint, bandages, draw-sheets, and where the wound is covered by the shirt, it is rendered septic by dipping it in the solution and drying before the fire. To make any of these dressings, all that is necessary is to soak them in this solution and dry. It not being volatile does not require to be kept sealed in tin cases. He also colors these dressings with aniline blue $\frac{1}{10000}$; the benefit to be derived from this is that wherever an alkaline discharge comes in contact with the dressing, the blue is removed and turned reddish, enabling you at once to see where the discharge has been, if the quantity was ever so small, and had dried up before the dressing was removed. There is one precaution in using this dressing, and that is this,—the dressing being dry and frequently handled, might have some septic matter from bedclothes, hands, etc., so he always dips it in $\frac{1}{2000}$ perchloride just before applying it. He is making a sal alembroth protective, which will be surcharged with the antiseptic, so that as a discharge comes through a dressing, it will come in contact with this protective, and can be kept aseptic.—*Pharmaceutical Record*, May 15, 1886.

HYDRASTIN.

DR. A. T. SLAVATINSKI, who has published as a graduation dissertation an account of his researches on the pharmacological action of hydrastin, which he gave to a number of pregnant bitches and rabbits, as well as to other animals, finds that when introduced into the blood in doses of not less than a hundred-thousandth of the body-weight, or one centigramme per kilogramme of the body-weight, it acts as a stimulant to the spinal cord and medulla oblongata. In medium doses it paralyzes the vaso-motor centres, thus decreasing the blood-pressure. It acts on the heart first as a stimulant, and afterwards as a depressant of the motor ganglia. No effect seems to be produced on the peripheral branches of the pneumogastric. The augmentation of the cardiac contractions begins from the spinal cord. At first the secretory and convulsive centres are stimulated and afterwards paralyzed. Hydrastin, in doses of from 0.01 to 0.03 grm. per kilogramme of body-weight, was found to act as an ecbolic in pregnancy, and to produce contraction in the fibres of the non-pregnant uterus. At a certain period of pregnancy, which for the human subject is about seven months, the drug in the same small doses (0.01 to 0.03 per kilogramme), if repeated a few times, appears to cause a miscarriage. The author had an opportunity of trying the ecbolic effect of hydrastin on a woman who had a contracted pelvis and in whom it was desirable to bring on the labor somewhat before its proper time. On March 3, which was the commencement of the ninth month of pregnancy, a gramme dose of hydrochlorate of hydrastin was administered hypodermically morning and evening. These injections were repeated the

following day. In the evening the patient noticed that the movements of the fœtus were particularly strong. On the forenoon of March 5 a gramme and a half was injected, and subsequently two strong movements were felt. The same evening two grammes were injected. On the forenoon of the 6th two grammes were given, and there followed during the day three strong movements. At night three grammes were injected. On the forenoon of the 7th three grammes were given, and one very violent and prolonged movement was experienced. Two grammes were given in the evening. No further injections were required, as signs of approaching labor manifested themselves. The child was born without complications, but it died the next day. Dr. Slavatinski suggests that if further experiments show that hydrastin may be used without danger to the mother, it may well replace the use of instruments in cases where premature induction of labor is required. He considers that hydrastin and its salts are more reliable than other preparations of the root. With regard to the dose for therapeutic purposes, he puts the maximum daily quantity at 0.3 grm. when given hypodermically, but would give doses of 0.5 grm. internally.—*Lancet*, May 22, 1886.

MENTHOL IN URTICARIA AND PRURITUS.

Among the myriad of remedies for these troublesome affections we have no other which affords such complete and instantaneous relief as a solution of menthol. Not only is the itching relieved for the time, but a cure seems to be effected. In pruritus and in eczema, moistening the parts with menthol solution causes an immediate cessation of the pain. The solution should contain from two to ten grains of menthol to the ounce of water.—*Amer. Journ. of Pharmacy*, April, 1886.

TREATMENT OF ACUTE RHEUMATISM.

The last number of the *Russkaya Meditsina* contains a communication from Dr. L. Grinevitski, of Rostoff-on-the-Don, who writes that for more than twenty years he has treated acute articular rheumatism with nitrate of potassium, two drachms being given daily in raspberry syrup, and a dose administered every two hours. Together with this internal medication he prescribes an ointment for use morning and evening of the following composition: Olei hyosc., 1 oz.; ung. hydrarg. cinerei, 2 dr.; ext. acon., 1 dr. He has tried all ordinary remedies, and finds that on the whole this plan of treatment is more satisfactory than any other, being especially valuable in those cases where salicylates fail to give relief. Generally the disease is brought to an end in from one to two weeks, according to its severity and the time the treatment was commenced. When commenced at the onset of the attack, and before more than one joint was affected, the others were usually spared altogether.—*Lancet*, May 22, 1886.

ACTION OF POTASSIUM CHLORATE ON CHLORAL HYDRATE.

K. Seubert calls attention in the *Pharmaceutical Record*, May 15, 1886, to the fact that when 165 grammes of chloral hydrate and 37.43 grammes of potassium chlorate are finely powdered, and exposed to direct sunlight in a flask fitted with a reflux condenser, a reaction soon begins with a great rise of temperature, and the flask must be cooled by immersion in cold water. Chlorine, phosgene gas, carbonic anhydride, and chloroform are given off. In four days the reaction is complete, and a separation of crystals takes place, which may be increased by surrounding the flask with ice. The whole is then filtered, and washed with absolute alcohol. Water is added to the alcoholic solution, which then yields on evaporation very pure hydrogen potassium trichloracetate. A small quantity of perchlorethane is also formed in the reaction.

WRIGHTINE AND CONESSINE.

Wrightine is an alkaloid which is obtained from the seeds of the East Indian apocynea wrighta dysenterica by digestion of the alcoholic extract with dilute hydrochloric acid, and precipitating by ammonia or sodium carbonate. This alkaloid was first isolated in 1864 by Stenhouse, and has recently been described by Haines and Wamecke as the first natural alkaloid which was free from oxygen. Haines claims priority of discovery of this alkaloid, to which he states that he gave the name of conessine.

The alkaloid forms a voluminous, friable mass of colorless crystals, melting by prolonged heat at 60° or 70°, and forming good crystallizable salts with acids. In the pure state, heated carefully in a retort, they undergo sublimation. The salts are with difficulty soluble in water, readily soluble in ether, alcohol, chloroform, petroleum ether, benzol, amyl alcohol, and bisulphide of carbon.